VWR

EQUIPOS DE LABORATORIO

Excelente Calidad y Respaldo

VWR Scientific Products

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MERCK

VWR™ Freezers and Refrigerators

Safe, reliable cold storage for the laboratory

Safe, Reliable Cold Storage for the Laboratory

VWR™ freezers and refrigerators are designed and manufactured to provide dependable storage and outstanding temperature stability for your valuable samples, reagents and materials.

Unlike traditional freezers and refrigerators that provide inadequate capacity and poor temperature uniformity, VWR freezers and refrigerators are designed specifically for laboratory applications.

They feature easy-to-use controls, durable construction for long life and powerful refrigeration systems for optimum cold storage performance.

VWR Freezers, Refrigerators and Combination Units

VWR Ultra-Low Temperature Chest and Upright Freezers

VWR Signature™ -86°C and VWR -40°C/-86°C freezers are available in chest and upright configurations for a wide range of sample storage needs. High performance VWR Signature models are equipped with sophisticated control, alarm and monitoring systems, while standard models provide all that's required for cost-effective, reliable storage.

- Capacities to suit every laboratory
- Durable construction for long life
- Environmentally friendly, CFC-free refrigerants and insulation
- Two year warranty
- Built to UL and CUL standards for safety and performance

VWR General Purpose Laboratory Freezers and Refrigerators

General Purpose freezers, refrigerators and refrigerator/freezer combinations meet a wide range of temperature, space and capacity requirements for general-purpose storage.

- Foamed-in-place insulation for high performance and low operating costs
- Durable, white acrylic exteriors; seamless, easy-to-clean interiors
- Environmentally friendly, CFC-free refrigerants and insulation
- Hermetically sealed compressors for quiet operation
- Built to UL and CUL standards for safety and performance

VWR Specialty Freezers, Refrigerators and Combination Units

VWR offers a variety of cold storage products for specialty applications, including flammable material storage, explosion proof storage, and chromatography.

- Durable construction for long life
- Environmentally friendly, CFC-free refrigerants and insulation
- Hermetically sealed compressors for quiet operation
- Built to UL and CUL standards for safety and performance

14230-104
Signature Upright Freezer

55703-101
Combination Unit

55703-633
Explosion Proof Freezer

VWR Signature™ Ultra-Low Temperature Freezers – proven performance for demanding storage needs

Fully featured VWR Signature chest and upright ULT freezers provide unsurpassed temperature stability for safe, reliable sample storage. Modern, ergonomic design ensures optimum functionality, convenience and ease of use.

- Stable temperatures from -50°C to -86°C
- Wide range of capacities from 3 to 23 cu. ft.
- Audible alerts to unsafe conditions
- Automatic compensation for low voltage minimizes wear on compressor(s)
- Options and accessories for tailored solutions
- Advanced microprocessor control and monitoring with centralized message center to simplify programming, set-up and monitoring

User-Friendly Design
Controls and optional chart recorders/ dataloggers are conveniently located at eye level on uprights and within easy reach on chests.

Cat. # 14230-122

Cat. # 14230-104

Chest and upright freezers shown with optional circular chart recorders.

VWR Signature Upright Freezers

Temperature Range -50°C to -86°C

Catalog Number	Volume Liters (cu.ft.)	Interior Dimensions H x W x D, cm (inches)	Exterior Dimensions[1] H x W x D, cm (inches)	Electrical[2]	Amps	Ship Weight kg (lbs)
14230-104	368 (13)	131 x 58 x 49 (51.5 x 23 x 19.3)	198 x 85 x 79 (78 x 33.3 x 31)	120 V/60 Hz	16/20	313 (690)
14230-102	368 (13)	131 x 58 x 49 (51.5 x 23 x 19.3)	198 x 85 x 79 (78 x 33.3 x 31)	230 V/50/60 Hz	12/15	313 (690)
14230-106	490 (17.3)	131 x 58 x 64 (51.5 x 23 x 25.2)	198 x 85 x 94 (78 x 33.3 x 37)	120 V/60 Hz	16/20	358 (790)
14230-108	490 (17.3)	131 x 58 x 64 (51.5 x 23 x 25.2)	198 x 85 x 94 (78 x 33.3 x 37)	230 V/50/60 Hz	12/15	358 (790)
14230-110	650 (23)	131 x 78 x 64 (51.5 x 30.8 x 25.2)	198 x 104 x 94 (78 x 41 x 37)	230 V/50/60 Hz	12/15	390 (860)

VWR Signature Chest Freezers

Temperature Range -50°C to -86°C

Catalog Number	Volume Liters (cu.ft.)	Interior Dimensions H x W x D, cm (inches)	Exterior Dimensions[1] H x W x D, cm (inches)	Electrical[2]	Amps	Ship Weight kg (lbs)
14230-112	85 (3)	42 x 47 x 47 (16.5 x 18.5 x 18.5)	111 x 72 x 73 (43.8 x 26.5 x 28.8)	115 V 60 Hz	10.5/15	159 (350)
14230-114	85 (3)	42 x 47 x 47 (16.5 x 18.5 x 18.5)	111 x 72 x 73 (43.8 x 26.5 x 28.8)	230 V 50 Hz	5.4/15	159 (350)
14230-122	359 (12.7)	71 x 108 x 47 (28 x 43.5 x 18.5)	103 x 183 x 73 (40.5 x 72 x 28.8)	120 V 60 Hz	16/20	338 (745)
14230-120	359 (12.7)	71 x 108 x 47 (28 x 43.5 x 18.5)	103 x 183 x 73 (40.5 x 72 x 28.8)	230 V 50/60 Hz	12/15	338 (745)
14230-130	566 (20)	71 x 169 x 47 (28 x 66.5 x 18.5)	103 x 244 x 73 (40.5 x 96 x 28.8)	120 V 60 Hz	16/20	386 (852)
14230-128	566 (20)	71 x 169 x 47 (28 x 66.5 x 18.5)	103 x 244 x 73 (40.5 x 96 x 28.8)	230 V 50/60 Hz	12/15	386 (852)

Continuing research and improvements may result in specification changes at any time. Freezers are UL Listed to Canadian and United States requirements ($_cUL_{US}$) and bear the CE Mark.
1) Clearance requirements: for uprights, add 9 cm (3.5") to width for latch/hinge and 18 cm (7") for control panel bezel/wall spacer; for chests, add 20 cm (7.9") to depth for wall spacer/handle.
2) Operating range of 115 V units is 103-127 V, 120V units is 108-130 V, and 230 V units is 208-240 V.

Easy Cleaning
The hinged grille swings out, exposing the foam air filter for cleaning or replacement.

Ease of Use
All VWR freezers have an ergonomically designed handle for easy, effortless freezer openings and closings. You can hold samples in one hand and open or close the freezer with the other.

Wipe Clean Interior
The wipe clean interior is designed for maximum sample integrity.

Ergonomically designed for Convenience and Easy Operation

Safe Storage
audible alarms alert to unsafe conditions.

Flexible configurations
with optional temperature recorders, safety back-up systems, remote alarms, inventory and storage systems.

Easy operation
with one-handed, easy to grasp handle.

Environmentally friendly
CFC-free refrigerants and insulation.

Improved sample protection
Specially designed hermetic compressor(s) provide improved product protection, better temperature recovery times and increased heat removal.

At-a-glance monitoring
Advanced microprocessor control/ monitoring system with centralized message center simplifies monitoring, programming and set-up of freezer parameters and conditions.

Easy door openings
Vacuum relief port on upright models causes pressure to equalize, allowing easy re-entry after door closings.

Rugged construction
Heavy-gauge, cold-rolled steel cabinet has a powder coat paint finish that resists chipping and rust.

Easy cleaning
Hinged grille swings out to expose the foam air filter for easy cleaning or replacement.

VWR Signature™ Upright Freezer Cat. # 14230-104.

VWR™ Low and Ultra-Low Temperature Freezers – cost-effective, reliable sample storage

VWR Low and Ultra-Low freezers deliver reliable performance, temperature stability and short or long-term storage protection when sophisticated controls and alarm systems are not required.

- Stable temperatures from -10°C to -40°C (Low) or -50°C to -86°C (Ultra-Low)
- Wide range of capacities from 3 to 23 cu. ft.
- Microprocessor controller maintains constant temperatures
- Audible/visual alerts to unsafe conditions
- Automatic compensation for low voltage minimizes wear on compressor(s)
- Options and accessories for tailored solutions

Upright and chest freezers, chest shown with optional circular chart recorder

Cat. # 14230-134

Cat. # 14230-142

VWR Low Temperature Upright Freezers

Temperature Range -10°C to -40°C						
Catalog Number	**Volume Liters (cu.ft.)**	**Interior Dimensions H x W x D, cm (inches)**	**Exterior Dimensions[1] H x W x D, cm (inches)**	**Electrical[2]**	**Amps**	**Ship Weight kg (lbs)**
14230-162	368 (13)	131 x 58 x 49 (51.5 x 23 x 19.3)	198 x 85 x 79 (78 x 33.3 x 31)	120 V/60 Hz	10/15	265 (585)
14230-164	368 (13)	131 x 58 x 49 (51.5 x 23 x 19.3)	198 x 85 x 79 (78 x 33.3 x 31)	230 V/50/60 Hz	6.5/15	265 (585)
14230-166	490 (17.3)	131 x 58 x 64 (51.5 x 23 x 25.2)	198 x 85 x 94 (78 x 33.3 x 37)	120 V/60 Hz	10/15	345 (760)
14230-168	490 (17.3)	131 x 58 x 64 (51.5 x 23 x 25.2)	198 x 85 x 94 (78 x 33.3 x 37)	230 V/50/60 Hz	6.5/15	345 (760)

VWR Ultra-Low Temperature Upright Freezers

Temperature Range -50°C to -86°C						
Catalog Number	**Volume Liters (cu.ft.)**	**Interior Dimensions H x W x D, cm (inches)**	**Exterior Dimensions[1] H x W x D, cm (inches)**	**Electrical[2]**	**Amps**	**Ship Weight kg (lbs)**
14230-134	368 (13)	131 x 58 x 49 (51.5 x 23 x 19.3)	198 x 85 x 79 (78 x 33.3 x 31)	120 V/60 Hz	16/20	313 (690)
14230-132	368 (13)	131 x 58 x 49 (51.5 x 23 x 19.3)	198 x 85 x 79 (78 x 33.3 x 31)	230 V/50/60 Hz	12/15	313 (690)
14230-136	490 (17.3)	131 x 58 x 64 (51.5 x 23 x 25.2)	198 x 85 x 94 (78 x 33.3 x 37)	120 V/60 Hz	16/20	358 (790)
14230-138	490 (17.3)	131 x 58 x 64 (51.5 x 23 x 25.2)	198 x 85 x 94 (78 x 33.3 x 37)	230 V/50/60 Hz	12/15	358 (790)
14230-140	650 (23)	131 x 58 x 64 (51.5 x 23 x 25.2)	198 x 104 x 94 (78 x 41 x 37)	230 V/50/60 Hz	12/15	390 (860)

VWR Ultra-Low Temperature Chest Freezers

Temperature Range -50°C to -86°C						
Catalog Number	**Volume Liters (cu.ft.)**	**Interior Dimensions H x W x D, cm (inches)**	**Exterior Dimensions[1] H x W x D, cm (inches)**	**Electrical[2]**	**Amps**	**Ship Weight kg (lbs)**
14230-142	85 (3)	42 x 47 x 47 (16.5 x 18.5 x 18.5)	111 x 72 x 73 (43.8 x 26.5 x 28.8)	115 V 60 Hz	10.5/15	159 (350)
14230-144	85 (3)	42 x 47 x 47 (16.5 x 18.5 x 18.5)	111 x 72 x 73 (43.8 x 26.5 x 28.8)	230 V 50 Hz	5.4/15	159 (350)
14230-152	359 (12.7)	71 x 108 x 47 (28 x 43.5 x 18.5)	103 x 183 x 73 (40.5 x 72 x 28.8)	120 V 60 Hz	16/20	338 (745)
14230-150	359 (12.7)	71 x 108 x 47 (28 x 43.5 x 18.5)	103 x 183 x 73 (40.5 x 72 x 28.8)	230 V 50/60 Hz	12/15	338 (745)
14230-160	566 (20)	71 x 169 x 47 (28 x 66.5 x 18.5)	103 x 244 x 73 (40.5 x 96 x 28.8)	120 V 60 Hz	16/20	386 (852)
14230-158	566 (20)	71 x 169 x 47 (28 x 66.5 x 18.5)	103 x 244 x 73 (40.5 x 96 x 28.8)	230 V 50/60 Hz	12/15	386 (852)

Continuing research and improvements may result in specification changes at any time. Freezers are UL Listed to Canadian and United States requirements ($_{c}UL_{US}$) and bear the CE Mark.
1) Clearance requirements: for uprights, add 9 cm (3.5") to width for latch/hinge and 18 cm (7") for control panel bezel/wall spacer; for chests, add 20 cm (7.9") to depth for wall spacer/handle.
2) Operating range of 115 V units is 103-127 V, 120V units is 108-130 V, and 230 V units is 208-240 V.

VWR™ General Purpose Lab Freezers and Refrigerators – the economical choice for non-critical storage

VWR General Purpose freezers, refrigerators and refrigerator/freezer combinations are ideal for all-round, non-critical lab applications.

They provide versatile, cost-effective storage and are rugged enough for everyday use. Models are available to meet a wide range of temperature, space and capacity requirements.

- Freezer temperature range of -12°C to -20°C
- Freezer capacities from 5 to 30.4 cu. ft.
- Refrigerator temperature range of +2°C to +10°C
- Refrigerator capacities from 20.7 to 31.1 cu. ft.
- Combination units span tabletop, undercounter, single and double door models

Combination Unit (left) and Freezer (right)

Cat. # 55703-065

Cat. # 55703-430

VWR General Purpose Laboratory Freezers

Temperature Range -12°C to -20°C; Factory preset -20°C

Catalog Number	Doors	Volume Liters (cu.ft.)	Interior Dimensions H x W x D, cm (inches)	Exterior Dimensions H x W x D, cm (inches)	Electrical	Amps	Ship Weight kg (lbs)
55703-510	1	141 (5)	74 x 48 x 50 (29 x 18.8 x 19.5)	85 x 54 x 67 (33.5 x 21.3 x 26.5)	120 V/60 Hz	1.4	38 (84)
55703-429	1	490 (17.3)	131 x 69 x 55 (51.5 x 27 x 21.5)	166 x 81 x 71 (65.2 x 32 x 28)	120 V/60 Hz	1.8	107 (253)
55703-430	1	586 (20.7)	145 x 69 x 60 (57 x 27 x 23.5)	178 x 81 x 77 (70.2 x 32 x 30.2)	120 V/60 Hz	1.8	114 (250)
55703-432[1]	1	861 (30.4)	161 x 81 x 66 (63.5 x 32 x 26)	192 x 90 x 86 (75.5 x 35.5 x 34)	120 V/60 Hz	9.0	159 (350)

1) Casters standard.

VWR General Purpose Laboratory Refrigerators

Temperature Range +2°C to +10°C; Factory preset +4°C

Catalog Number	Doors	Volume Liters (cu.ft.)	Interior Dimensions H x W x D, cm (inches)	Exterior Dimensions H x W x D, cm (inches)	Electrical	Amps	Ship Weight kg (lbs)
55703-076	1	586 (20.7)	145 x 69 x 60 (57 x 27 x 23.5)	178 x 81 x 77 (70.2 x 32 x 30.2)	120 V/60 Hz	5	113 (250)
55703-078[1]	1	827 (29.2)	165 x 81 x 66 (65.1 x 32 x 26)	194 x 89 x 86 (76.2 x 35 x 33.9)	120 V/60 Hz	5.7	159 (350)
55703-120[1,2]	1	861 (31.1)	161 x 81 x 61 (63.2 x 32 x 24)	194 x 92 x 81 (76.3 x 36.3 x 31.8)	120 V/60 Hz	7.2	159 (350)

1) Casters standard. 2) Glass door.

VWR General Purpose Laboratory Refrigerator/Freezer Combinations

Temperature Range +2°C to +10°C; Factory preset +4°C (Refrigerator), -12°C to -20°C; Factory preset -20°C (Freezer)

Catalog Number	Doors	Volume Liters (cu.ft.)	Interior Dimensions H x W x D, cm (inches)	Exterior Dimensions H x W x D, cm (inches)	Electrical	Amps	Ship Weight kg (lbs)
55703-054	1	6 (0.2) Frz 43 (1.5) Ref	12 x 26 x 28 (4.8 x 10.3 x 11) Frz 40 x 43 x 36 (15.8 x 16.8 x 14.2) Ref	53 x 50 x 51 (20.7 x 19.7 x 20)	120 V/60 Hz	1.5	18 (40)
55703-065	1	14 (0.5) Frz 144 (5.1) Ref	13 x 45 x 38 (5.2 x 17.8 x 14.9) Frz 53 x 48 x 50 (21 x 19 x 19.5) Ref	85 x 54 x 66 (33.6 x 21.4 x 25.8)	120 V/60 Hz	0.9	35 (78)
55703-446	2	68 (2.4) Frz 249 (8.8) Ref	33 x 47 x 43 (13.9 x 18.5 x 17) Frz 114 x 52 x 46 (44.9 x 20.5 x 18) Ref	170 x 60 x 62 (67 x 23.5 x 24.5)	120 V/60 Hz	1.5	69 (151)

Note: Published interior volumes are nominal, useable cu.ft. capacities may be offset by shelves, drawers, blower coils or cabinet protusions.

VWR™ Flammable Material Storage Freezers and Refrigerators – safe storage for volatile substances

VWR Flammable Material Storage refrigerators, freezers and refrigerator/freezer combinations are engineered without the internal electrical components that could potentially trigger a fire. All units comply with OSHA and National Fire Protection Association safety requirements.

- Wide range of models, with temperature ranges and capacities to suit a variety of storage needs
- Externally-mounted thermostat and isolated compressor components ensure that interiors are spark proof
- Non-sparking magnetic vinyl gaskets provide a positive door seal

Flammable Material Freezer

Cat. # 55703-531

VWR Flammable Material Storage Freezers

Temperature Range -12°C to -20°C; Factory preset -20°C							
Catalog Number	**Doors**	**Volume Liters (cu.ft.)**	**Interior Dimensions H x W x D, cm (inches)**	**Exterior Dimensions H x W x D, cm (inches)**	**Electrical**	**Amps**	**Ship Weight kg (lbs)**
55703-514	1	141 (5)	74 x 48 x 50 (29 x 18.8 x 19.5)	85 x 54 x 67 (33.5 x 21.3 x 26.5)	120 V/60 Hz	1.4	38 (84)
55703-520	1	490 (17.9)	131 x 69 x 55 (51.5 x 27 x 21.5)	166 x 81 x 76 (65.2 x 32 x 30)	120 V/60 Hz	1.8	107 (253)
55703-531	1	586 (20.7)	145 x 69 x 60 (57 x 27 x 23.5)	178 x 81 x 82 (70.2 x 32 x 32.2)	120 V/60 Hz	1.8	114 (250)

VWR Flammable Material Storage Refrigerator

Temperature Range +2°C to +10°C; Factory preset +4°C							
Catalog Number	**Doors**	**Volume Liters (cu.ft.)**	**Interior Dimensions H x W x D, cm (inches)**	**Exterior Dimensions H x W x D, cm (inches)**	**Electrical**	**Amps**	**Ship Weight kg (lbs)**
55703-178	1	586 (20.7)	145 x 69 x 60 (57 x 27 x 23.5)	178 x 81 x 82 (70.2 x 32 x 32.2)	120 V/60 Hz	5	113 (250)

VWR Flammable Material Storage Refrigerator/Freezer Combinations

Temperature Range: Model 55703-134: +2°C to +10°C; Factory preset +4°C (Refrigerator), uncontrolled (Freezer). Model 55703-444: +2°C to +4°C; Factory preset +4°C (Refrigerator), -14°C to -20°C; Factory preset -17°C (Freezer)							
Catalog Number	**Doors**	**Volume Liters (cu.ft.)**	**Interior Dimensions H x W x D, cm (inches)**	**Exterior Dimensions H x W x D, cm (inches)**	**Electrical**	**Amps**	**Ship Weight kg (lbs)**
55703-134	1	14 (0.5) Frz 144 (5.1) Ref	13 x 45 x 38 (5.2 x 17.8 x 14.9) Frz 53 x 48 x 50 (21 x 19 x 19.5) Ref	85 x 54 x 66 (33.6 x 21.4 x 25.8)	120 V/60 Hz	0.9	35 (78)
55703-444	2	68 (2.4) Frz 249 (8.8) Ref	33 x 47 x 43 (13.9 x 18.5 x 17) Frz 114 x 52 x 46 (44.9 x 20.5 x 18) Ref	170 x 60 x 64 (67 x 23.5 x 25.4)	120 V/60 Hz	1.5	69 (151)

Note: Published interior volumes are nominal, useable cu.ft. capacities may be offset by shelves, drawers, blower coils or cabinet protusions.

VWR™ Explosion Proof Freezers and Refrigerators – maximum safety in the workplace

VWR Explosion Proof freezers, refrigerators and combinations prevent the triggering of an explosion inside or outside of the cabinet. Designed to provide maximum storage safety for volatile materials, units meet OSHA/National Fire Protection Association safety standards and are suitable for Class 1, Group C and Group D hazardous material environments.

- Wide range of models, with temperature ranges and capacities to suit a variety of storage needs
- Safe, spark-proof interiors
- Steel-encased electrical components eliminate ignition sources inside and outside of the cabinet
- Non-sparking magnetic vinyl gaskets provide a positive door seal

Explosion Proof Freezer

VWR Explosion Proof Freezers

Cat. # 55703-633

Temperature Range -12°C to -20°C; Factory preset -20°C							
Catalog Number	**Doors**	**Volume Liters (cu.ft.)**	**Interior Dimensions H x W x D, cm (inches)**	**Exterior Dimensions H x W x D, cm (inches)**	**Electrical**	**Amps**	**Ship Weight kg (lbs)**
55703-512	1	141 (5)	74 x 48 x 50 (29 x 18.8 x 19.5)	85 x 54 x 73 (33.5 x 21.3 x 28.8)	120 V/60 Hz	1.4	38 (84)
55703-622	1	490 (17.3)	131 x 69 x 55 (51.5 x 27 x 21.5)	166 x 81 x 83 (65.2 x 32 x 32.8)	120 V/60 Hz	1.8	107 (253)
55703-633	1	586 (20.7)	145 x 69 x 60 (57 x 27 x 23.5)	178 x 81 x 88 (70.2 x 32 x 34.8)	120 V/60 Hz	1.8	114 (250)

VWR Explosion Proof Refrigerator

Temperature Range +2°C to +10°C; Factory preset +4°C							
Catalog Number	**Doors**	**Volume Liters (cu.ft.)**	**Interior Dimensions H x W x D, cm (inches)**	**Exterior Dimensions H x W x D, cm (inches)**	**Electrical**	**Amps**	**Ship Weight kg (lbs)**
55703-236	1	586 (20.7)	145 x 69 x 60 (57 x 27 x 23.5)	178 x 81 x 88 (70.2 x 32 x 34.8)	120 V/60 Hz	5	113 (250)

VWR Explosion Proof Refrigerator/Freezer Combinations

Temperature Range: Model 55703-190: +2°C to +10°C; Factory preset +4°C (Refrigerator), uncontrolled (Freezer). Model 55703-442: +2°C to +4°C; Factory preset +4°C (Refrigerator), -14°C to -20°C; Factory preset -17°C (Freezer)							
Catalog Number	**Doors**	**Volume Liters (cu.ft.)**	**Interior Dimensions H x W x D, cm (inches)**	**Exterior Dimensions H x W x D, cm (inches)**	**Electrical**	**Amps**	**Ship Weight kg (lbs)**
55703-190	1	14 (0.5) Frz 144 (5.1) Ref	13 x 45 x 38 (5.2 x 17.8 x 14.9) Frz 53 x 48 x 50 (21 x 19 x 19.5) Ref	85 x 54 x 74 (33.6 x 21.4 x 29)	120 V/60 Hz	0.9	35 (78)
55703-442	2	68 (2.4) Frz 249 (8.8) Ref	33 x 47 x 43 (13.9 x 18.5 x 17) Frz 114 x 52 x 46 (44.9 x 20.5 x 18) Ref	170 x 60 x 71 (67 x 23.5 x 27.8)	120 V/60 Hz	1.5	69 (151)

Note: Published interior volumes are nominal, useable cu.ft. capacities may be offset by shelves, drawers, blower coils or cabinet protusions.

VWR Signature™ Chromatography Refrigerators – superior temperature uniformity and recovery

VWR Signature Chromatography refrigerators offer plenty of space inside the cabinet for control apparatus and chromatography instrumentation. Units are equipped with automatic defrost systems, built-in condensate evaporators, a vapor-proof duplex outlet and two access ports for media or probes.

- Temperature range of +2°C to +10°C, factory pre-set to +4°C
- Microprocessor control system with digital temperature display
- Full-view glass doors with closed cell door gaskets to eliminate condensation
- Illuminated interior for high visibility
- Keyed on/off power switch for added security

Model shown with optional chart recorder

Cat. # 55703-660

VWR Signature Chromatography Refrigerators

Temperature Range +2°C to +10°C; Factory preset +4°C							
Catalog Number	**Door Type**	**Volume Liters (cu.ft.)**	**Interior Dimensions H x W x D, cm (inches)**	**Exterior Dimensions H x W x D, cm (inches)**	**Electrical**	**Amps**	**Ship Weight kg (lbs)**
55703-656	Single, swinging	826 (29.2)	147 x 760 x 730 (58 x 30 x 29)	201 x 87 x 92 (79 x 34 x 36)	115 V/60 Hz	9.4	197 (435)
55703-660	Double, sliding	1297 (45.8)	147 x 133 x 66 (58 x 52.5 x 26)	201 x 144 x 84 (79 x 56.5 x 33)	115 V 60Hz	15.2	304 (670)
55703-245	Single, swinging	659 (23.3)	147 x 61 x 73 (58 x 24 x 29)	201 x 72 x 92 (79 x 28 x 36.2)	115 V 60Hz	9.4	193 (425)
55703-252	Double, swinging	1447 (51.1)	147 x 133 x 73 (58 x 52.5 x 29)	201 x 144 x 92 (79 x 56.5 x 36.2)	115 V 60Hz	15.0	263 (580)

Note: Published interior volumes are nominal, useable cu.ft. capacities may be offset by shelves, drawers, blower coils or cabinet protusions.

VWR Signature™ Low and Ultra-Low Freezer Accessories

Accessories for VWR Signature Low and Ultra-Low freezers allow you to take full advantage of storage space as well as tailor the freezer to meet your specific requirements.

- Inventory systems
- Storage boxes and dividers
- Temperature recorders
- Safety back-up systems
- Remote alarms

...and more

Accessories include a wide range of racks, boxes and dividers to maximize storage efficiency

Inventory Control Systems

For Upright Freezers

Catalog #	Rack Description (Dimensions = H x W x D), cm (inches)	Number of Racks Needed for Maximum Capacity 13 cu. ft.	17.3 cu. ft.	23 cu. ft.
	Rack with handle and adjustable shelves 27.7 x 14 x 41.9 (10.9 x 5.5 x 16.5)			
25000-066	9 position rack with 3" boxes	16		
25000-082	9 position rack without 3" boxes	16		
25000-070	15 position rack with 2" boxes	16		
25000-086	15 position rack without 2" boxes	16		
	Rack with handle and adjustable shelves 27.7 x 14 x 55.9 (10.9 x 5.5 x 22)			
25000-072	12 position rack with 3" boxes		16	20
25000-088	12 position rack without 3" boxes		16	20
25000-074	20 position rack with 2" boxes		16	20
25000-090	20 position rack without 2" boxes		16	20
	Microplate rack with handle			
25000-094	30 position deepwell microplate rack 24.4 x 14 x 55.9 (9.6 x 5.5 x 22)		16	20
25000-096	36 position deepwell microplate rack 30.5 x 14 x 55.9 (12 x 5.5 x 22)		16	20
25000-098	66 position microplate rack 24.4 x 14 x 55.9 (9.6 x 5.5 x 22)		16	20
	Rack with sliding drawers 30.2 x 14 x 42.2 (11.9 x 5.5 x 16.4)			
14230-200	Rack with (15) 2" boxes	16		
14230-202*	Rack without 2" boxes	16		
14230-204	Rack with (9) 3" box	16		
14230-206	Rack without 3" boxes	16		
	Rack with sliding drawers 30.2 x 14 x 55.9 (11.9 x 5.5 x 22)			
14230-208	Rack with (20) 2" boxes		16	20
14230-210*	Rack without 2" boxes		16	20
14230-212	Rack with (12) 3" boxes		16	20
14230-214	Rack without 3" boxes		16	20

**Rack capacity: 60 standard or 20 deepwell microplates in 13 cu. ft. uprights and 90 standard or 30 deepwell microplates in 17.3 and 23 cu. ft. uprights.*

Inventory Control Systems

For Chest Freezers

Catalog #	Rack Description (Dimensions = H x W x D), cm (inches)	Number of Racks Needed for Maximum Capacity 3 cu. ft.	6.7 cu. ft.	12.7 cu. ft.	17 cu. ft.	20 cu. ft.
	Rack with handle 40.6 x 14 x 14 (16 x 5.5 x 5.5)					
25000-060	5 position rack with 3" boxes	9	18			
25000-076	5 position rack without 3" boxes	9	18			
25000-062	7 position rack with 2" boxes	9	18			
25000-078	7 position rack without 2" boxes	9	18			
	Rack with handle 67.3 x 14 x 14 (26.5 x 5.5 x 5.5)					
25000-064	8 position rack with 3" boxes			21	29	33
25000-080	8 position rack without 3" boxes			21	29	33
25000-068	12 position rack with 2" boxes			21	29	33
25000-084	12 position rack without 2" boxes			21	29	33
	Microplate rack with handle 65.5 x 13.5 x 9.1 (25.8 x 5.3 x 3.6)					
25000-092	27 position microplate rack			33	48	51

Storage Boxes and Cell Dividers for Boxes

Catalog #	Description
25000-134	2" box with 81 cell divider 13.5 x 13.5 x 5.1 (5.3 x 5.3 x 2)
25000-136	3" box with 81 cell divider 13.5 x 13.5 x 7.6 (5.3 x 5.3 x 3)
25000-138	16 cell divider, 1.22" nominal opening
25000-140	25 cell divider, 0.98" nominal opening
25000-142	49 cell divider, 0.70" nominal opening
25000-144	64 cell divider, 0.61" nominal opening
25000-146	81 cell divider, 0.54" nominal opening
25000-148	100 cell divider, 0.49" nominal opening

Remote Alarms

Catalog #	Description
25000-128	Audible signal; 120 V 60 Hz
25000-130	Audible/visual signals; 120 V 60 Hz
25000-132	Audible/visual signals; 230 V 50 Hz

Telephone Dialing Systems

Catalog #	Description
13305-300	Four channel system, monitors up to four inputs and dials up to four different telephone numbers; 120 V, 60 Hz; 5.1 x 19.8 x 21.8 (2 x 7.8 x 8.6)); factory installed
13305-302	Same as No. 13305-300 but monitors up to eight inputs and dials up to eight different telephone numbers

Safety Back-Up Systems

Catalog #	Description
14230-170	Deluxe CO_2 back-up system with hose and fittings, factory installed
14230-172	Deluxe CO_2 back-up system with hose and fittings, customer installed*
14230-174	LN_2 back-up system with hose and fittings, factory installed
14230-176	LN_2 back-up system with hose and fittings, customer installed*
25000-112	CO_2 cylinder wall clamp

Temperature Recorders

Catalog #	Description
14230-178	Built-in 6", 7 day circular chart recorder, -100°C to 38°C, single pen, customer installed*
14230-180	Built-in 6", 7 day circular chart recorder, -100°C to 38°C, single pen, factory installed
14230-196	Built-in digital datalogger,** -90°C to 140°C, customer installed*
14230-198	Built-in digital datalogger,** -90°C to 140°C, factory installed
25000-124	Paper for No. 14230-178 and 14230-180 recorders
14231-832	Red felt-tip pen for chart recorders

Data Outputs and Sample Probes for Signature Series Freezers

Catalog #	Description
14230-182	RS-232, 0-1 V, factory installed
14230-184	RS-232, 0-5 V, factory installed
14230-186	RS-485, 4-20 mA, factory installed
14230-188	RS-485, 0-1V, factory installed
14230-190	RS-485, 0-5V, factory installed
14230-192	Sample probe kit for VWR Signature™ Series uprights, customer installed*
14230-194	Sample probe kit for VWR Signature Series uprights, factory installed

Inner Doors for -40°C Uprights

Catalog #	Description
25000-150	Four interior compartment doors, factory installed

* *Must be installed by qualified personnel.*

** *Dataloggers meet the following U.S. Food and Drug Administration (FDA) guidelines: cGLP 21 CFR Part 58, Software Validation 21 CFR Part 820, and Electronic Records 21 CFR Part 11.*

VWR INTERNATIONAL

VWR Signature™ Compact Laboratory Refrigerator

Designed Specifically for Lab Storage

14236-524

Signature PRODUCTS

VWR Signature™ Laboratory Refrigerator

- Designed Specifically for Laboratory Storage
- No Wasted Inner Chamber and Door Storage

VWR Signature Series Compact Laboratory refrigerator for under bench or free standing applications.

The chamber features three adjustable full depth shelves and flat inner door liner for maximum storage capacity. The interior liner is fabricated from seamless high impact polystyrene with rounded corners for ease in cleaning.

Designed for general purpose clinical, life science, pharmaceutical, biotechnology and industrial use.

Equipped with an adjustable thermostat control with electronic safeguard that ensures refrigerator contents will not freeze.

Specifications

Model Number	L4110W **(VWR Cat. No. 14236-524)**
Internal Capacity/Volume	4.9 cu. ft.
Exterior Dimensions	21 3/8"W (876 mm) x 33 3/4"H (600 mm) x 22 3/4"D (648 mm)
Clearance Requirements	10" clearance required from top, 4" from back and 1" from sides
Refrigeration System	R134a HFC "Green" refrigerant, internal skin condenser
Temperature Control	Temperature Control Thermodial, located inside refrigerator chamber
Temperature Setpoint Range	1º to 10ºC
Interior Storage	Flat inner door, three adjustable full depth shelves
Door Swing	Right hand door swing is field reversible
Electrical Requirements	120V, 60Hz, 0.9 A
Weight	76 lbs. (35kg)
Price	$780

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VWR Signature Products:
Delivering high quality and superior performance

VWR INTERNATIONAL™

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12/04 15M Lit. No. 92071

VWR™ INTERNATIONAL

VWR™ Chest and Upright Freezers

-40˚C and -86˚C Freezers for Safe Sample Storage

14230-152 chest and 14230-104 upright freezers shown with optional circular chart recorders

14230-122 chest and 14230-104 upright freezers shown with optional circular chart recorders

VWR Signature™ Ultra-Low Temperature Freezers

- Safe storage at -50˚C to -86˚C
- Multiple capacities
- Modern design
- Reliable performance
- Centralized message center
- Non-CFC refrigerants, insulation, and packaging
- Two year warranty

VWR Signature -86˚C Chest and Upright Freezers combine refrigeration engineering expertise, safe storage, and temperature stability with a modern design that focuses on functionality, convenience, and ease of use.

Ergonomic Design for Convenience and Ease of Use

- Easy-to-grasp handle promotes one-handed operation. Samples can be held in one hand while opening or closing the door or lid. Vacuum relief port on uprights causes pressure to equalize, allowing easy re-entry after door closings.
- Advanced Microprocessor Control/Monitoring System with centralized message center simplifies programming, setup, and monitoring of freezer parameters and conditions. Audible/alarms (e.g., high/low temp, power fail, probe fail, door open, etc.) offer peace-of-mind. Controls and optional built-in chart recorder or datalogger are conveniently located at eye level on uprights and within easy reach on chests.
- Dual wheel, locking, swivel casters allow mobility as well as secure positioning.
- Acoustical mufflers and sound-absorbing foam in the base of the uprights reduces noise, resulting in more comfortable working conditions in the lab.
- Spring-loaded hinges counterbalance the chest lid to ensure proper alignment, smooth closure, and a tight seal.
- Hinged grille swings out, exposing the foam air filter for easy cleaning or replacement.

VWR Signature Products:
Delivering high quality and superior performance

Quality Construction and Optimum Performance

- Durable, heavy-gauge, cold-rolled steel cabinet has a powder coat paint finish that resists chipping and rust. Powder-coated, galvannealed interior is designed for maximum capacity.
- Uprights include three fixed position shelves and four interior compartment doors, which reduce cold air loss. Chests include polystyrene sub-lid(s) to reduce cold air loss.
- Automatic Voltage Compensator detects line frequency, monitors incoming voltage, and dynamically adjusts compressor voltage to reduce wear and tear on the compressor(s).
- Specially designed hermetic compressor(s) provide improved product protection, better temperature recovery times, and increased heat removal per kilowatt of energy used.
- Temperature control system maintains constant freezer temperature and can be set in 1˚C increments.
- Carefully crafted, front-to-back air circulation system results in cooler compressor temperatures, increased performance, and longer compressor life.
- RS-232 and 4-20 milliamp analog outputs are standard. Other options are available (see *Accessories* section).

Specifications

VWR No.	Volume Cu. Ft.	Interior Dimensions W x H x D, cm (inches)	Exterior Dimensions* W x H x D, cm (inches)	Electrical**	Amps/ Breaker	Shipping Wt. kg (lbs.)
-50˚C to -86˚C Uprights						
14230-104 14230-102	13	58 x 131 x 49 (23 x 51-1/2 x 19-9/32)	85 x 198 x 79 (33-1/4 x 78 x 31)	120V, 60 Hz 230V, 50/60 Hz	16/20 12/15	313 (690)
14230-106 14230-108	17.3	58 x 131 x 64 (23 x 51-1/2 x 25-3/16)	85 x 198 x 94 (33-1/4 x 78 x 37)	120V, 60 Hz 230V, 50/60 Hz	16/20 12/15	358 (790)
14230-110	23	78 x 131 x 64 (30-3/4 x 51-1/2 x 25-3/16)	104 x 198 x 94 (41 x 78 x 37)	230V, 50/60 Hz	12/15	390 (860)
-50˚C to -86˚C Chests						
14230-112 14230-114	3	47 x 42 x 47 (18-1/2 x 16-1/2 x 18-1/2)	72 x 111 x 73 (26-1/2 x 43-3/4 x 28-13/16)	115V, 60 Hz 230V, 50 Hz	10.5/15 5.4/15	159 (350)
14230-116 14230-118	6.7	97 x 42 x 47 (38 x 16-1/2 x 18-1/2)	122 x 111 x 73 (48 x 43-3/4 x 28-13/16)	115V, 60 Hz 230V, 50 Hz	10.5/15 5.4/15	263 (580)
14230-122 14230-120	12.7	108 x 71 x 47 (43-1/2 x 28 x 18-1/2)	183 x 103 x 73 (72 x 40-1/2 x 28-13/16)	120V, 60 Hz 230V, 50/60 Hz	16/20 12/15	338 (745)
14230-124 14230-126	17	149 x 71 x 47 (58-3/4 x 28 x 18-1/2)	223 x 103 x 73 (87-3/5 x 40-1/2 x 28-13/16)	120V, 60 Hz 230V, 50/60 Hz	16/20 12/15	383 (845)
14230-130 14230-128	20	169 x 71 x 47 (66-1/2 x 28 x 18-1/2)	244 x 103 x 73 (96 x 40-1/2 x 28-13/16)	120V, 60 Hz 230V, 50/60 Hz	16/20 12/15	386 (852)

Continuing research and improvements may result in specification changes at any time.
Freezers are UL Listed to Canadian and United States requirements ($_{c}UL_{US}$) and bear the CE Mark.
*Clearance requirements: for uprights, add 9cm (3-1/2") to width for latch/hinge and 18cm (7") for control panel bezel/wall spacer; for chests, add 20cm (7-9/10") to depth for wall spacer/handle.
**Operating range of 115V units is 103-127V, 120V units is 108-130V, and 230V units is 208-240V.

14230-134 upright and 14230-142 chest freezers, chest shown with an optional circular chart recorder

VWR Low and Ultra-Low Temperature Freezers

- Safe storage at -10˚C to -40˚C and -50˚C to -86˚C
- Multiple capacities
- Dependable performance
- Audible/visual alarm system
- Non-CFC refrigerants, insulation, and packaging
- Two year warranty

Cost-effective VWR -40˚C and -86˚C Freezers provide reliable performance, temperature stability, and short- or long-term storage protection when sophisticated controls and alarm systems are not required.

Fundamental Design

- Rugged, heavy-gauge, cold-rolled steel cabinet has a powder coat paint finish that resists chipping and rust. Powder-coated, galvannealed interior is designed for maximum capacity.
- Uprights include three fixed position shelves. The -86˚C uprights include four interior compartment doors, which reduce cold air loss. Chests include polystyrene sub-lid(s) to reduce cold air loss.
- Easy-to-grasp handle promotes one-handed operation by minimizing the effort required to open or close the door or lid. Vacuum relief port on uprights causes pressure to equalize, allowing easy re-entry after door closings.
- Dual wheel, locking, swivel casters allow mobility as well as secure positioning.
- Acoustical mufflers and sound-absorbing foam in the base of the uprights reduces noise, resulting in more comfortable working conditions in the lab.
- Spring-loaded hinges counterbalance the chest lid to ensure proper alignment, smooth closure, and a tight seal.
- Hinged grille swings out, exposing the foam air filter for easy cleaning or replacement.

VWR:
Providing value at competitive prices

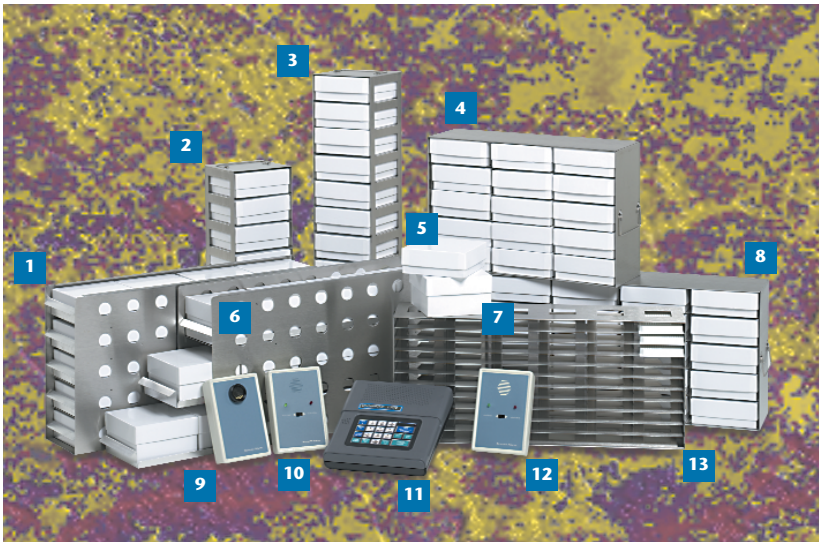
Reliable Short- or Long-Term Storage

- Microprocessor controller maintains a constant temperature. Audible/visual alarms (e.g., high/low temp, power fail, probe fail, door open, etc.) ensure peace-of-mind monitoring.
- Automatic Voltage Compensator detects line frequency, monitors incoming voltage, and dynamically adjusts compressor voltage to reduce wear and tear on the compressor(s).
- Specially designed hermetic compressor(s) provide improved product protection, better temperature recovery times, and increased heat removal per kilowatt of energy used.
- Temperature control system maintains constant freezer temperature and can be set in 1˚C increments.
- Front-to-back air circulation system results in cooler compressor temperatures, increased performance, and longer compressor life.

Specifications

VWR No.	Volume Cu. Ft.	Interior Dimensions W x H x D, cm (inches)	Exterior Dimensions* W x H x D, cm (inches)	Electrical**	Amps/ Breaker	Shipping Wt. kg (lbs.)
-10˚C to -40˚C Uprights						
14230-162	13	58 x 131 x 49	85 x 198 x 79	120V, 60 Hz	10/15	265 (585)
14230-164		(23 x 51-1/2 x 19-1/4)	(33-1/4 x 78 x 31)	230V, 50/60 Hz	6.5/15	
14230-166	17.3	58 x 131 x 64	85 x 198 x 94	120V, 60 Hz	10/15	345 (760)
14230-168		(23 x 51-1/2 x 25-1/4)	(33-1/4 x 78 x 37)	230V, 50/60 Hz	6.5/15	
-50˚C to -86˚C Uprights						
14230-134	13	58 x 131 x 49	85 x 198 x 79	120V, 60 Hz	16/20	313 (690)
14230-132		(23 x 51-1/2 x 19-1/4)	(33-1/4 x 78 x 31)	230V, 50/60 Hz	12/15	
14230-136	17.3	58 x 131 x 64	85 x 198 x 94	120V, 60 Hz	16/20	358 (790)
14230-138		(23 x 51-1/2 x 25-1/4)	(33-1/4 x 78 x 37)	230V, 50/60 Hz	12/15	
14230-140	23	58 x 131 x 64	104 x 198 x 94	230V, 50/60 Hz	12/15	390 (860)
		(23 x 51-1/2 x 25-1/4)	(41 x 78 x 37)			
-50˚C to -86˚C Chests						
14230-142	3	47 x 42 x 47	72 x 111 x 73	115V, 60 Hz	10.5/15	159 (350)
14230-144		(18-1/2 x 16-1/2 x 18-1/2)	(26-1/2 x 43-3/4 x 28-13/16)	230V, 50 Hz	5.4/15	
14230-146	6.7	97 x 42 x 47	122 x 111 x 73	115V, 60 Hz	10.5/15	263 (580)
14230-148		(38 x 16-1/2 x 18-1/2)	(48 x 43-3/4 x 28-13/16)	230V, 50 Hz	5.4/15	
14230-152	12.7	108 x 71 x 47	183 x 103 x 73	120V, 60 Hz	16/20	338 (745)
14230-150		(43-1/2 x 28 x 18-1/2)	(72 x 40-1/2 x 28-13/16)	230V, 50/60 Hz	12/15	
14230-154	17	149 x 71 x 47	223 x 103 x 73	120V, 60 Hz	16/20	383 (845)
14230-156		(58-3/4 x 28 x 18-1/2)	(87-5/8 x 40-1/2 x 28-13/16)	230V, 50/60 Hz	12/15	
14230-160	20	169 x 71 x 47	244 x 103 x 73	120V, 60 Hz	16/20	386 (852)
14230-158		(66-1/2 x 28 x 18-1/2)	(96 x 40-1/2 x 28-13/16)	230V, 50/60 Hz	12/15	

Continuing research and improvements may result in specification changes at any time.
Freezers are UL Listed to Canadian and United States requirements ($_cUL_{US}$) and bear the CE Mark.
*Clearance requirements: for uprights, add 9cm (3-1/2") to width for latch/hinge and 18cm (7") for control panel bezel/wall spacer; for chests, add 20cm (7-9/10") to depth for wall spacer/handle.
**Operating range of 115V units is 103-127V, 120V units is 108-130V, and 230V units is 208-240V.



1) 14230-208, 2) 25000-062, 3) 25000-068, 4) 25000-070, 5) 25000-134, 6) 14230-212, 7) 25000-136, 8) 25000-074, 9) 25000-128, 10) 25000-132, 11) 13305-300, 12) 25000-130, 13) 25000-098

VWR Freezer Accessories

- Inventory systems
- Storage boxes and dividers
- Temperature recorders
- Safety back-up systems
- Remote alarms

...and more

Accessories for VWR Signature -86˚C and VWR -40˚C and -86˚C Freezers allow you to take full advantage of the storage space as well as tailor the freezer to meet your specific requirements.

Inventory Control Systems for Uprights

VWR No.	Rack Description (Dimensions = W x H x D)	Number of Racks Needed for Max. Capacity		
		13 cu. ft.	17.3 cu. ft.	23 cu. ft.
	Rack with handle and adjustable shelves, 14 x 27-7/10 x 41-9/10cm (5-1/2 x 10-9/10 x 16-1/2")			
25000-066	9-position rack with 3" boxes	16		
25000-082	9-position rack without 3" boxes	16		
25000-070	15-position rack with 2" boxes	16		
25000-086	15-position rack without 2" boxes	16		
	Rack with handle and adjustable shelves, 14 x 27-7/10 x 55-9/10cm (5-1/2 x 10-9/10 x 22")			
25000-072	12-position rack with 3" boxes		16	20
25000-088	12-position rack without 3" boxes		16	20
25000-074	20-position rack with 2" boxes		16	20
25000-090	20-position rack without 2" boxes		16	20
	Microplate rack with handle			
25000-094	30-position Deepwell microplate rack 14 x 24-2/5 x 55-9/10cm (5-1/2 x 9-3/5 x 22")		16	20
25000-096	36-position Deepwell microplate rack 14 x 30-1/2 x 55-9/10cm (5-1/2 x 12 x 22")		16	20
25000-098	66-position microplate rack 14 x 24-2/5 x 55-9/10cm (5-1/2 x 9-3/5 x 22")		16	20
	Rack with sliding drawers, 14 x 30-1/5 x 42-1/5cm (5-1/2 x 11-9/10 x 16-2/5")			
14230-200	Rack with (15) 2" boxes	16		
14230-202*	Rack without 2" boxes	16		
14230-204	Rack with (9) 3" box	16		
14230-206	Rack without 3" boxes	16		
	Rack with sliding drawers, 14 x 30-1/5 x 55-9/10cm (5-1/2 x 11-9/10 x 22")			
14230-208	Rack with (20) 2" boxes		16	20
14230-210*	Rack without 2" boxes		16	20
14230-212	Rack with (12) 3" boxes		16	20
14230-214	Rack without 3" boxes		16	20

*Rack capacity: 60 standard or 20 Deepwell microplates in 13 cu. ft. uprights and 90 standard or 30 Deepwell microplates in 17.3 and 23 cu. ft. uprights.

Inventory Control Systems for Chests

VWR No.	Rack Description (Dimensions = W x H x D)	Number of Racks Needed for Max. Capacity				
		3 cu. ft.	6.7 cu. ft.	12.7 cu. ft.	17 cu. ft.	20 cu. ft.
	Rack with handle, 14 x 40-3/5 x 14cm (5-1/2 x 16 x 5-1/2")					
25000-060	5-position rack with 3" boxes	9	18			
25000-076	5-position rack without 3" boxes	9	18			
25000-062	7-position rack with 2" boxes	9	18			
25000-078	7-position rack without 2" boxes	9	18			
	Rack with handle, 14 x 67-1/4 x 14cm (5-1/2 x 26-1/2 x 5-1/2")					
25000-064	8-position rack with 3" boxes			21	29	33
25000-080	8-position rack without 3" boxes			21	29	33
25000-068	12-position rack with 2" boxes			21	29	33
25000-084	12-position rack without 2" boxes			21	29	33
	Microplate rack with handle, 13-1/2 x 65-1/2 x 9-1/10cm (5-1/4 x 25-3/4 x 3-3/5")					
25000-092	27-position microplate rack			33	48	51

Storage Boxes and Cell Dividers for Boxes

VWR No.	Description
25000-134	2" box with 81-cell divider, 13-1/2 x 13-1/2 x 5-1/10cm (5-1/4 x 5-1/4 x 2")
25000-136	3" box with 81-cell divider, 13-1/2 x 13-1/2 x 7-3/5cm (5-1/4 x 5-1/4 x 3")
25000-138	16-cell divider, 1.22" nominal opening
25000-140	25-cell divider, 0.98" nominal opening
25000-142	49-cell divider, 0.70" nominal opening
25000-144	64-cell divider, 0.61" nominal opening
25000-146	81-cell divider, 0.54" nominal opening
25000-148	100-cell divider, 0.49" nominal opening

Temperature Recorders

VWR No.	Description
14230-178	Built-in 6", 7 day circular chart recorder, -100˚C to 38˚C, single pen, customer installed*
14230-180	Built-in 6", 7 day circular chart recorder, -100˚C to 38˚C, single pen, factory installed
14230-196	Built-in digital datalogger,** -90˚C to 140˚C, customer installed*
14230-198	Built-in digital datalogger,** -90˚C to 140˚C, factory installed
25000-124	Paper for No. 14230-178 and 14230-180 recorders
14231-832	Red felt-tip pen for chart recorders

Safety Back-Up Systems

VWR No.	Description
14230-170	Deluxe CO_2 back-up system with hose and fittings, factory installed
14230-172	Deluxe CO_2 back-up system with hose and fittings, customer installed*
14230-174	LN_2 back-up system with hose and fittings, factory installed
14230-176	LN_2 back-up system with hose and fittings, customer installed*
25000-112	CO_2 cylinder wall clamp

Remote Alarms

VWR No.	Description
25000-128	Audible signal; 120V, 60 Hz
25000-130	Audible/visual signals; 120V, 60 Hz
25000-132	Audible/visual signals; 230V, 50 Hz

Telephone Dialing Systems

VWR No.	Description
13305-300	Four channel system, monitors up to four inputs and dials up to four different telephone numbers; 120V, 60 Hz; 19-4/5 x 5-1/10 x 21-4/5cm (7-3/4 x 2 x 8-3/5"); factory installed
13305-302	Same as No. 13305-300 but monitors up to eight inputs and dials up to eight different telephone numbers

Data Outputs and Sample Probes for Signature Series Freezers

VWR No.	Description
14230-182	RS-232, 0-1V, factory installed
14230-184	RS-232, 0-5V, factory installed
14230-186	RS-485, 4-20 milliamps, factory installed
14230-188	RS-485, 0-1V, factory installed
14230-190	RS-485, 0-5V, factory installed
14230-192	Sample probe kit for Signature Series uprights, customer installed*
14230-194	Sample probe kit for Signature Series uprights, factory installed

Inner Doors for -40˚C Uprights

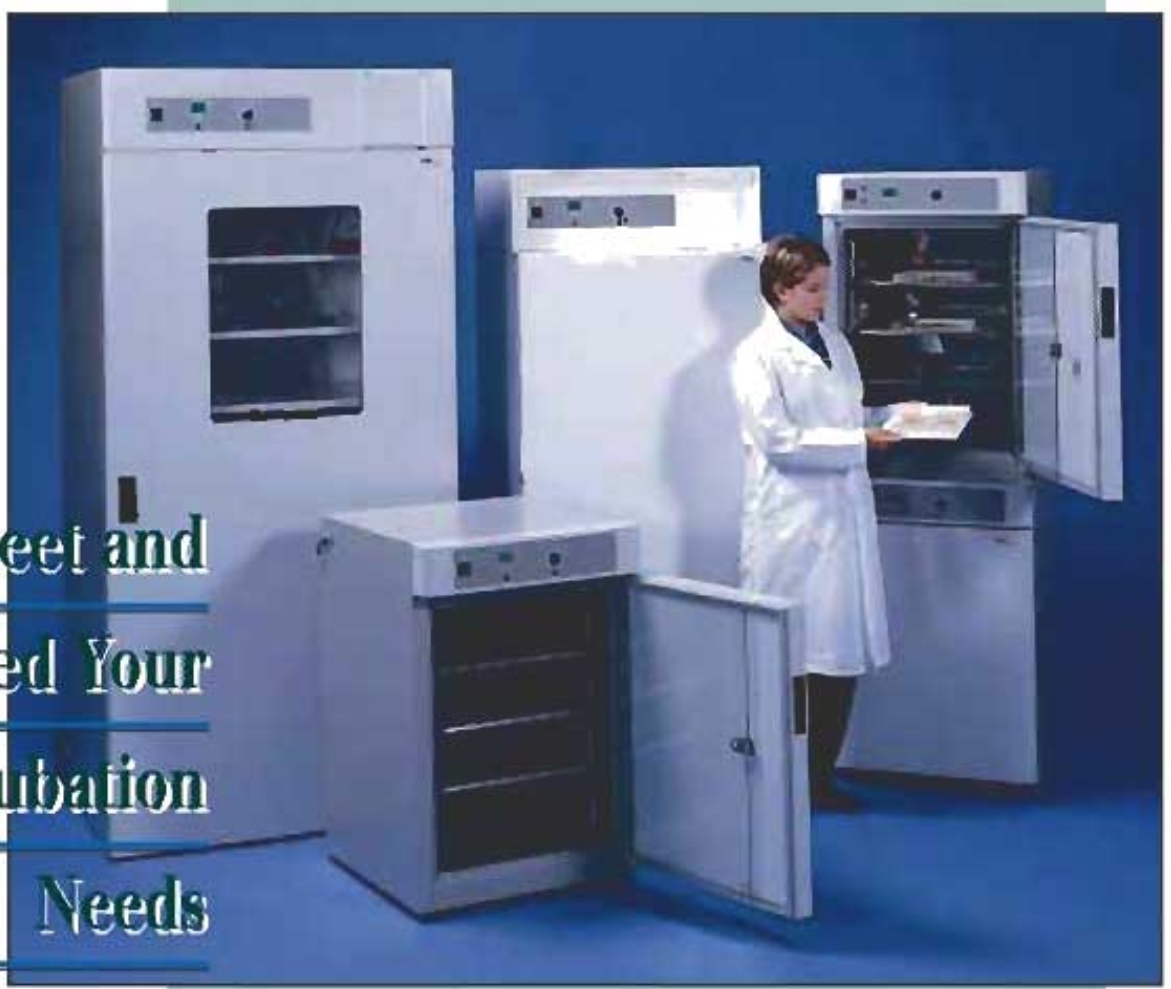
VWR No.	Description
25000-150	Four interior compartment doors, factory installed

*Must be installed by qualified personnel

** Dataloggers meet the following U.S. Food and Drug Administration (FDA) guidelines: cGLP 21 CFR Part 58, Software Validation 21 CFR Part 820, and Electronic Records 21 CFR Part 11.

VWR™

VWR General Purpose Incubators



Meet and Exceed Your Incubation Needs

Incubators shown above (clockwise from top left): Model 1925 (page 5), Model 2020 (page 7), Model 1565 (pages 2-3), Model 1545 (pages 2-3)

35823-204

VWR General Purpose Incubators 1500 Series

VWR's General-Purpose Laboratory Incubators provide top-of-the-line performance. Designed with your samples in mind, they offer safe, dependable incubation of specimens.

- Exclusive Hybrid Heating System
- Microprocessor Temperature Control
- Easy Keypad Set and Calibration
- Independent Over-Temperature Protection
- Exclusive Access Port
- Heated Outer Door
- Interior Electrical Outlet
- Stainless Steel Interior and Shelves
- VWR 24-Month Warranty

Exclusive hybrid heating system

Incorporating heating elements in all five walls, the exclusive hybrid heating system creates a warm air jacket around the inner chamber, guaranteeing superior temperature uniformity without hot spots. The system also provides the best of convection and gravity—through temperature uniformity—without the disadvantages of samples drying and cross contamination.

Five sided heating

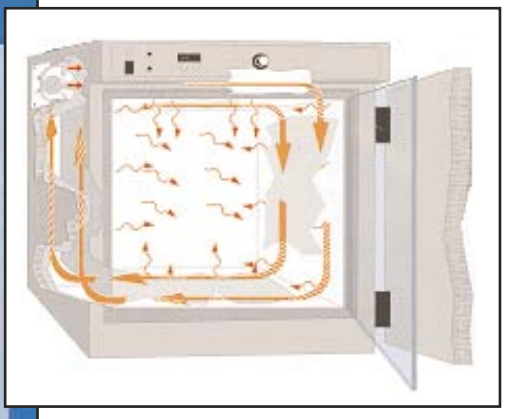
The heating elements, located outside the chamber's interior (bottom, back, both sides and door), ensure exceptional temperature uniformity and recovery. No need to worry about heater element damage from spill either—the inner chamber is completely sealed and the low-watt density heating elements are safely isolated from the work chamber.

Microprocessor temperature control

The controls of the General Purpose Incubator 1500 Series are PID digital setpoint, digital read display. The keypad operation is user friendly and offers the ability to calibrate the display to a reference thermometer. In addition, a user adjustable over-temperature safety controller is standard. In the unlikely event that the main controller fails, the safety controller will take control of the unit, protecting the samples and the unit itself. Other safety features include a circuit breaker, tempered safety glass door, no chamber heating elements and deburred shelves.

35823-259

Hybrid Heating System



Other quality features

1500 Series Incubators are constructed with a stainless steel interior and shelves. The exterior has a powder coated paint finish. All units are stackable without the need for spacer racks. A new vapor tight interior electrical outlet is CUL specified and approved. Units feature through-wall access ports for chart recorder use and adjustable leveling feet for uneven surfaces. Shelves are adjustable in 1/2" increments. The Model 1535 is ideal for under-the-counter applications. VWR 24-month warranty on parts and service is standard.

Specifications:
Temperature Range: 5° above ambient to 60°C
Uniformity: ±0.25° at 37°C

115V models are CSA and CUL approved, CE certification.

Cat. No.	Model	Cap. cu. ft.	Electrical	Interior, W x D x H, in.	Exterior, W x D x H, in.	No. of Shelves	Ship Wt., lbs.	Each	
35823-10 2	1525	1.95	115V, 360 W	15 x 15 x 1 5	21 x 21 x 2 5	2	125	$1535.04	
35823-10 3	1525	1.95	230V, 360 W	15 x 15 x 1 5	21 x 21 x 2 5	2	125	1535.04	
35823-15 7	1535	6.67	115V, 600 W	24 x 24 x 2 0	30 x 30 x 3 2	2	207	1993.91	
35823-15 8	1535	6.67	230V, 600 W	24 x 24 x 2 0	30 x 30 x 3 2	2	207	1993.91	
35823-20 4	1545	6.0	115V, 650 W	20 x 20 x 2 6	25 x 27 x 3 6	3	195	1999.36	
35823-20 5	1545	6.0	230V, 650 W	20 x 20 x 2 6	25 x 27 x 3 6	3	195	1999.36	
35823-25 9	1555, Side-by-Sid e	11.25	115V, 750 W	36 x 20 x 2 7	42 x 27 x 3 7	6	410	3518.00	
35823-26 0	1555, Side-by-Sid e	11.25	230V, 750 W	36 x 20 x 2 7	42 x 27 x 3 7	6	410	3518.00	
35823-30 0	1565, Over/Unde r	12.0	115V, 1200 W	19¼ x 20 x 26 (each)	42 x 27 x 7 2	6	400	3605.40	
35823-30 1	1565, Over/Unde r	12.0	230V,1200 W	19¼ x 20 x 26 (each)	42 x 27 x 7 2	6	400	3605.40	

35823-949

VWR Economy Incubators 1500E Series

- Flat Punched Stainless Steel Shelves
- Gravity Convection
- Hydraulic Temperature Controller

A top value choice

The 1500E Series Economy Incubators are a budget-wise choice for routine incubations of small work loads. Incubators utilize gravity convection and a non-contact heater to provide efficient heating. The heating element has an exclusive shield to protect against spills inside the chamber. The stainless steel chamber is insulated with 2" of industrial fiberglass, minimizing heat loss and maximizing uniformity.

Dependable hydraulic controller

The hydraulic controller is dependable and regulates the chamber temperature. Incubator door, with its positive door latch, is tightly sealed with a 1/2" silicone gasket. Glossy white interior enables easy contamination detection. Units are supplied with two punched stainless steel shelves, adjustable at 1/2" increments.

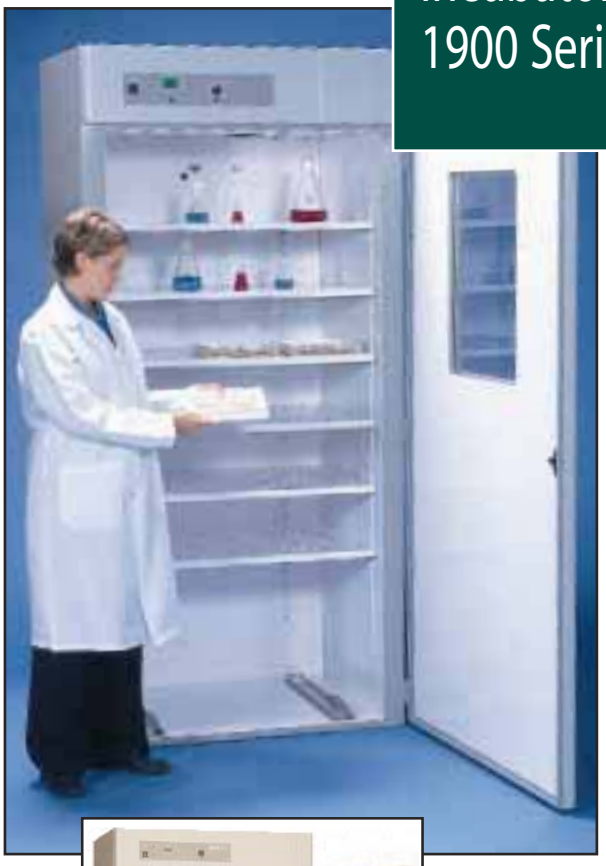
Specifications:
Temperature Range: 5° above ambient to 70°C
Uniformity: ±0.5° at 37°C

115V models are CSA and CUL approved, CE certification.

Cat. No.	Model	Cap. cu. ft.	Electrical	Interior, W x D x H, in.	Exterior, W x D x H, in.	Ship Wt., lbs.	Each
35823-949	1500E	1.0	115V, 330 W	12 x 12 x 12	17 x 17 1/2 x 19 1/2	53	$577.35
35823-950	1500E	1.0	230V, 330 W	12 x 12 x 12	17 x 17 1/2 x 19 1/2	53	577.35
35823-960	1510E	2.0	115V, 330 W	17 x 12 x 17	22 x 16 x 26 1/2	71	722.39
35823-961	1510E	2.0	230V, 330 W	17 x 12 x 17	22 x 16 x 26 1/2	71	722.39
52201-522	1515E	4.0	115V, 330 W	16 x 19 x 22	21 x 24.5 x 31.5	90	1428.00
52201-524	1516E	6.0	115V, 330 W	20 x 19 x 28	25 x 24.5 x 37.5	110	1555.50

VWR Reach-in Incubators 1900 Series

- Microprocessor Temperature Control
- Over-Temperature Protection
- Gentle Air Flow
- Stainless Steel Interior and Shelves
- Pre-wired Access Panel for Chart Recorder
- Four Interior Outlets



Top: 35962-095

Bottom: 35962-062 (possible shelving configurations illustrated)

Maximize lab space

These VWR Reach-in Incubators offer walk-in capacity but take up very little floor space. Model 1925 provides a capacity of over 40 cu. ft. and Model 1915 provides more than 27 cu. ft.

Precise temperature setting

The microprocessor control ensures precise temperature setting with its digital temperature setpoint and digital display of temperature in 0.1˚C increments, adjustable from 5˚ above ambient to 60˚C. The control panel is pre-wired for a chart recorder.

Gentle, forced air circulation

The gentle, forced air circulation enables ±0.5˚C temperature uniformity, faster heat transfer and rapid temperature recovery. A glass viewing window allows the user to see inside the chamber without disturbing the environment.

Stainless steel construction

All 1900 Series units feature all-welded, stainless steel construction with non-sag insulation on all six sides. Equipped with six flat punched stainless steel shelves, adjustable on 1/2" centers. Model 1915 has a reinforced floor which supports a roller bottle apparatus or shakers. Model 1925 features ramps that flip out for easy accommodation of a roller bottle apparatus or shakers. The units also have four interior outlets.

Specifications:
Temperature Range: 5° above ambient to 60°C
Uniformity: ±0.5° at 37°C

Cat. No.	Model	Cap. cu. ft.	Electrical	Interior, W x D x H, in.	Exterior, W x D x H, in.	No. of Shelves	Ship Wt., lbs.	Each	
35962-06	1915	27.5	115V, 60Hz, 1100 W	30¾ x 25 x 63	36 x 34 x 74	6	660	$5124.05	
35962-06	1915	27.5	230V, 50Hz, 1670 W	30¾ x 25 x 63	36 x 34 x 74	6	660	5124.05	
35962-09	1925	40	115V, 60Hz, 1480 W	35 x 26 x 76 ½	41 x 34 x 87	6	850	6337.87	
35962-09	1925	40	230V, 50Hz, 1700 W	35 x 26 x 76 ½	41 x 34 x 87	6	850	6337.87	

35824-058

VWR Water- Jacketed Incubators 3000 Series

- Large 16-Gallon Water Jacket
- Microprocessor Temperature Control
- Stainless Steel Interior and Shelves
- Over-Temperature Protection
- VWR 24-Month Warranty

Water jacket offers many benefits

3000 Series Water Jacket Incubators provide excellent temperature uniformity. Both the water jacket and the heated door design eliminate condensation on the walls and glass door. Copper strip in the water jacket inhibits bacteria growth.

Additional features

The microprocessor temperature control allows digital temperature set and read-out to 0.1˚C. Incubators are available as a single chamber unit or over/under unit and feature a full-length inner glass door for visual checks without disturbing incubation. Through-wall access port allows roller apparatus, rocker or stirrer operation. Adjustable leveling feet compensate for uneven surfaces. All 3000 Series Incubators are supplied with a humidity pan.

Note: Use only distilled water.

Specifications:
Temperature Range: 5° above ambient to 70°C
Uniformity: ±0.2° at 37°C

Cat. No.	Model	Cap. cu. ft.	Electrical	Interior, W x D x H, in.	Exterior, W x D x H, in.	No. of Shelves	Ship Wt., lbs.	Each	
35824-058	3015, Single Chamber	5.5	115V, 50/60Hz, 650 W	18½ x 18½ x 24½	23 x 23½ x 38½	6	315	$3305.28	
35824-059	3015, Single Chamber	5.5	230V, 50/60Hz, 650 W	18½ x 18½ x 24½	23 x 23½ x 38½	6	315	3305.28	
35824-080	3025, Over/Under	5.5 (ea.)	115V, 50/60Hz, 1300 W	18½ x 18½ x 24½ (ea.)	23 x 23½ x 77	12	630	6129.35	
35824-082	3025, Over/Under	5.5 (ea.)	230V, 50/60Hz, 1300 W	18½ x 18½ x 24½ (ea.)	23 x 23½ x 77	12	630	5979.86	

52201-460

VWR Anaerobic Chambers A141 Series

- True Vacuum and Vent/Gas Valves
- Unique Contact Heating System
- Removable Chamber Gasket
- Tempered Safety Glass Window

Unique contact heating system

VWR Anaerobic Chambers feature a unique contact heating system and wrap-around insulation to maintain temperature. A 9.5mm (3/8") vacuum valve and 6.4mm (1/4") vent and gas valve are conveniently located on top of the control panel for easy operation.

Cross-flow ventilation

Cross-flow ventilation allows inert gas to be forced over samples and throughout the chamber. Other features of the A141 Series include a hydraulic thermostat for temperature control, seamless stainless steel interior for easy cleaning and removable chamber gasket for easy maintenance. Chamber features a positive door latch, two fixed aluminum shelves and powder coat paint exterior. Units are supplied with glass thermometer plus one silica and cartridge of catalyst.

Specifications:
Temperature Range: 5° above ambient to 60°C
Uniformity: ±3.5° at 37°C

Cat. No.	Model	Cap. cu. ft.	Electrical	Interior, W x D x H, in.	Exterior, W x D x H, in.	Ship Wt., lbs.	Each	
52201-460	A141	0.6	115V, 50/60Hz, 550 W	9 x 12 x 9	19 x 16 x 16	68	$1542.68	
52201-462	A143	1.7	115V, 50/60Hz, 1100 W	12 x 20 x 12	25½ x 25 x 21	170	3408.75	

35960-056

VWR Low-Temperature 2000 Series

- Microprocessor Temperature Control
- CFC-Free Refrigerants
- VWR 24-Month Warranty
- Safety Hi/Lo Limit Control
- Access Panel

Model 2005

Space saving low temperature incubator is ideal for small volume workloads. Easy-to-clean chamber is fully insulated for efficient temperature transfer, and corrosion-resistant to ensure durability. Forced air circulation ensures the most reproducible test conditions. Equipped with hermetically-sealed compressor and an independent over-temperature safety controller.

Models 2020/2030

Mechanical convection system ensures even air distribution within the chamber. Fan-cooled, overload protected refrigeration system preserves the life of the incubator. Other features include digital temperature set controller, safety high/low limit controls and direct reading digital thermometer.

Specifications:

	Model 2005	Model 2020	Model 2030
Temperature Range:	-10 to 45°C	-10 to 45°C	-5 to 45°C
Uniformity at 20°C:	±0.5°C	±0.5°C	±0.5°C
Capacity, # of std. B.O.D. bottles:	62	317	625

Cat. No.	Model	Cap. cu. ft.	Electrical	Interior, W x D x H, in.	Exterior, W x D x H, in.	No. of Shelves	Ship Wt., lbs.	Each
35960-056	2005	4.0	115V, 60Hz, 400W	16 x 14½ x 30	23½ x 22 x 33	2	108	$1857.33
35960-057	2005	4.0	230V, 50Hz, 400W	16 x 14½ x 30	23½ x 22 x 33	2	108	2104.45
35960-098	2020	18	115V, 60Hz, 650W	27 x 19½ x 52½	32 x 27¼ x 74½	5	340	3054.90
35960-100	2020	18	230V, 1300W	27 x 19½ x 52½	32 x 27¼ x 74½	5	340	3309.90
35960-134	2030	25	115V, 60Hz, 650W	32 x 22½ x 65¼	35¾ x 33 x 82	7	750	7745.88
35960-136	2030	25	230V, 1500W	32 x 22½ x 65¼	35¾ x 33 x 82	7	750	7865.25

35960-076

VWR Diurnal Growth Chambers

- Interior Outlet
- Microprocessor Temperature Control
- CFC-Free Refrigerants
- Easy Keypad Set and Calibration
- VWR 24-Month Warranty

Two externally-mounted 24-hour timers independently control temperatures and lighting in 15-minute increments, simulating a diurnal cycle. A typical cycle could be an 8-hour day (heat and light), 16-hour night (cold and dark).

More Key Features:

Microprocessor temperature control is precise to 0.1°C. Unit features independent over-temperature safety protection, digital display and adjustable leveling feet.

Four 48" white fluorescent lamps (included) are vertically mounted on the incubator door.

Specifications:

Temperature Range: -10° to +45°C
Temperature Uniformity: ±0.5° at 20°C

Cat. No.	Model	Cap. cu. ft.	Electrical	Interior, L x D x H, in.	Exterior, L x D x H, in.	No. of Shelves	Ship Wt., lbs.	Each
35960-076	2015	17	115V, 1200W	32 x 26½ x 71½	27 x 23 x 48	5 fixed	340	$4584.90
35960-078	2015	17	230V, 900W	32 x 26½ x 71½	27 x 23 x 48	5 fixed	340	5023.50

VWR Incubator Accessories

A range of accessories to enhance incubator productivity are available through VWR.

52201-526

Cat. No.	For Model	Dimensions, in.	Each
Shelves			
52201-526	1525	14 x 14	$61.65
35823-429	1535	23 x 23	46.00
35823-462	1545/1565	19 x 19	46.00
35823-509	1555	15½ x 18¾	46.00
52200-904	1500E	11⅞ x 11⅞	46.00
52200-906	1510E	12¾ x 17	46.00
13500-002	1515E	15 x 18	60.00
13500-000	1516E	19 x 18	52.00
35962-083	1915	24 x 30	61.75
35962-118	1925	24 x 34⅜	82.00
52201-528	2005	15 x 13½	45.50
52201-530	2030	31 x 21½	100.00
35910-884	3015/3025	17¾ x 17¾	82.00
52201-538	A141	8 x 11	46.00
52201-561	A143	11 x 19	46.00

Cat. No.	For Model	Each
Silicone Gaskets		
52201-606	A141	$68.00
52201-581	A143	82.00
Reference Thermometers		
61010-020	General Purpose Thermometer (-20 to 110°C)	$8.98
Chart Recorders*		
55430-009	7 Day Temperature Only	$619.00
55476-407	Chart Paper	50/19.80

*Additional chart recorders are available.
Call 1-800-932-5000 or shop www.vwrsp.com

VWR™ Private Label CO_2 Incubators Deliver Wide Selection & Peace of Mind

2310 Personal Model

2475 Signature Series

1927 Large Capacity

2325 Signature Series

2 Year Limited Warranty

Signature Series CO_2 Incubators

Digital Display of CO_2, Temp. & Humidity

Patented HEPA Filtration System

Pre-heated Copper CO_2 Inlet

Stainless Steel Humidity Pan Included

2375 TC

Signature Series Features

- Patented HEPA Filtration System Eliminates Contaminates
- Anti-Corrosion Anode for Easy Set-up & Tap or Distilled Water Use
- Anti-Contanimation Copper Strip in Water Jacket
- Through Wall Access Port
- Preheated Copper CO_2 Inlet for better uniformity and contamination prevention.

2425 IR

IR Infrared Sensor **TC Thermal Conductivity Sensor**

The VWR Signature Series features an easy to operate microprocessor controller, with multiple inputs to continuously monitor chamber conditions. It provides users with precise keypad operation for accurate display of temperature, CO_2, and relative humidity. Temperature and CO_2 functions can be quickly calibrated with the keypad. Humidification is achieved through natural evaporation of water from the humidity pan and RH% is displayed digitally to a resolution of 1.0%.

The 19 gallon water jacket, with triple wall construction, ensures an exceptional temperature uniformity of ±0.5°C. Designed to eliminate cold spots - the prime source of condensation and contamination - the water jacket also features the unique VWR copper strip, placed in the water jacket to deter bacterial growth.

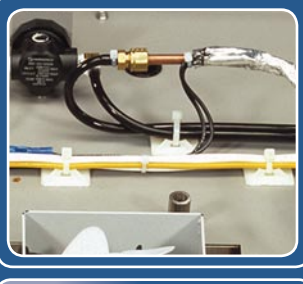
The Signature Series has a unique shelf design that can be installed & repositioned easily and removed just as quickly during routine cleaning. All interior shelving, standards, and shelf slides can be removed without any tools. The inner chamber is fitted with a removable gasket, that is autoclave safe.

Designed to remove and destroy airborne microbes, the HEPA filtration system isolates particulates and eliminates cross contamination by continuously drawing the chamber air through the filter. With a 99.7% efficiency rating at 0.3 microns and a copper housing, you can rest assured contamination will be trapped and not reproduce.

Anti-Corrosion Anode

Front-Mounted Sample Port

Copper-Housed HEPA Filter



Pre-Heated Copper CO_2 Inlet

The Signature Series comes equipped with two gaskets, one on the chamber, and the other on the outer door. The inner-chamber gasket is fully removable and autoclavable to facilitate cleaning. The copper and nickel-enriched stainless steel shelves and chamber provide ideal conditions for cell growth.

The VWR Signature Series CO_2 Incubators Offer Infrared or Thermal Conductivity CO_2 Sensing, Air or Water Jacketed Insulation, and come with a 2 Year Warranty

Temperature Range: Ambient +8°C - 60°C
Temperature Uniformity: +/-0.5° @ 37°C
CO_2 Range: 0-20%

2475 IR

VWR Cat. No.	Model	Style	No. of Shelves	Exterior W x D x H, in.	Interior W x D x H, in.	Cap. cu. ft.	Shipping Weight lbs.	Price Each
Thermal Conductivity								
35910-524	2325	Single, 120V	3	26.5 x 26 x 40	20.5 x 20 x 28	6.7	280 lbs	$6,025.75
35910-526	2325-2	Single, 220V	3	26.5 x 26 x 40	20.5 x 20 x 28	6.7	280 lbs	$6,695.28
35910-528	2375	Dual, 120V	6	26.5 x 26 x 80	20.5 x 20 x 28 (each)	13.4*	560 lbs	$11,742.42
35910-530	2375-2	Dual, 220V	6	26.5 x 26 x 80	20.5 x 20 x 28 (each)	13.4*	560 lbs	$13,047.14
Infrared								
35910-532	2425	Single, 120V	3	26.5 x 26 x 40	20.5 x 20 x 28	6.7	280 lbs	$7,340.47
35910-534	2425-2	Single, 220V	3	26.5 x 26 x 40	20.5 x 20 x 28	6.7	280 lbs	$8,156.08
35910-536	2475	Dual, 120V	6	26.5 x 26 x 80	20.5 x 20 x 28 (each)	13.4*	560 lbs	$14,375.95
35910-538	2475-2	Dual, 220V	6	26.5 x 26 x 80	20.5 x 20 x 28 (each)	13.4*	560 lbs	$15,973.29

*Indicates Two 6.7cu.ft Chambers Stacked

The Signature Series Air Jacket CO_2 Incubator

Temperature Range: Ambient +8°C - 60°C
Temperature Uniformity: +/-0.4° @ 37°C
CO_2 Range: 0-20%

The air jacketed CO_2 Incubators feature a slim, lightweight design that minimizes contamination. The 5216 can be operational within hours of installation and is well-suited for multiple users. Three temperature control settings (main chamber, external door and chamber front) minimize condensation and facilitate superior temperature uniformity. This fine tuning capability creates optimal culturing conditions.

Like the other Signature Series models the 5216 is equipped with the VWR copper coated HEPA filtration system.

Unparalleled Controls

A bright, digital keypad for CO_2 and temperature control is highly visible even from across the lab. These intelligent microprocessors constantly monitor and adjust program settings and allow calibration of CO_2 and temperature. The redundant over-temperature safety system helps protect your samples from overheating. A door switch that automatically turns off the gas when the door is opened will help conserve your CO_2 gas.

Shelf Standards Are Hung Using Key Hole Design

Shelf Slides Are Fully Adjustable

Unique Design Ensures the Shelf Won't Tip After Installation

Install and Remove Shelving Without Tools
In All VWR Select & Standard CO_2 Incubators

5216 Interior

Coved Corners for Quick Decontamination

Cat. No.	Model	Style	No. of Shelves	Exterior W x D x H, in.	Interior W x D x H, in.	Cap. cu. ft.	Shipping Weight lbs.	Price Each
Infrared								
15001-110	5216	Air Jacket, 120V	3	25 x 27 x 38	19 x 20 x 26	5.7	175 lbs	$2,910.54
14221-482	5216-2	Air Jacket, 220V	3	25 x 27 x 38	19 x 20 x 26	5.7	175 lbs	$3,150.83

Standard Series VWR CO_2 Incubators

2350

The Standard Series features the latest in microprocessor controlled technology with a PID digital set point and digital display of temperature and CO_2. User friendly keypad operation offers the ability to calibrate the display to a reference thermometer and fyrite. Once desired levels are set, the controls are automatic.

Extensive Selection

VWR offers two different controllers on their Standard Series CO_2 Incubators: Infrared (IR), Thermal Conductivity (TC). Models 2400/2450 feature the IR sensor, the most sophisticated technology for CO_2 detection and control. With Models 2300/2350, the TC control measures CO_2 to within 0.3%. The standard series also has the anti-corrosion anode and copper strip inside the water jacket to help prevent corrosion and contamination.

Convenient Front Keypad Calibration

Anti-Corrosion Anode and Copper Strip

Temperature Range: Ambient +8°C - 60°C
Temperature Uniformity: +/-0.5° @ 37°C
CO_2 Range: 0-20%

Sample Protection

A user-adjustable safety controller protects the samples and the unit in the unlikely event that the main temperature controller fails. The controls and CO_2 systems in the dual chamber models are completely independent, permitting separate but simultaneous incubation processes. For lab safety and specimen protection, audible and visual alarms signal high/low temperature, high/low CO_2 and low water jacket level. Other safety features include a circuit breaker and tempered safety glass door.

Cat. No.	Model	Style	No. of Shelves	Exterior W x D x H, in.	Interior W x D x H, in.	Cap. cu. ft.	Shipping Weight lbs.	Price Each
Thermal Conductivity								
35910-503	2300	Single, 120V	3	26.5 x 26 x 40	20.5 x 20 x 28	6.7	280 lbs	$4,962.51
35910-502	2300-2	Single, 220V	3	26.5 x 26 x 40	20.5 x 20 x 28	6.7	280 lbs	$5,455.61
35910-507	2350	Dual, 120V	6	26.5 x 26 x 80	20.5 x 20 x 28 (each)	13.4*	560 lbs	$9,560.85
35910-506	2350-2	Dual, 220V	6	26.5 x 26 x 80	20.5 x 20 x 28 (each)	13.4*	560 lbs	$10,623.18
Infrared								
35910-514	2400	Single, 120V	3	26.5 x 26 x 40	20.5 x 20 x 28	6.7	280 lbs	$6,046.77
35910-513	2400-2	Single, 220V	3	26.5 x 26 x 40	20.5 x 20 x 28	6.7	280 lbs	$6,718.63
35910-518	2450	Dual, 120V	6	26.5 x 26 x 80	20.5 x 20 x 28 (each)	13.4*	560 lbs	$11,835.56
35910-517	2450-2	Dual, 220V	6	26.5 x 26 x 80	20.5 x 20 x 28 (each)	13.4*	560 lbs	$13,150.62

*Indicates Two 6.7cu.ft Chambers Stacked

VWR Personal Size CO_2 Incubator

Compact Design for Personal Use

The 2310 is well suited for quality control applications, and any situations where cross contamination of samples is a primary concern. The 9 gallon water jacket provides a temperature uniformity of ±0.3 at 37°C. The microprocessor-based temperature controller provides highly accurate control of both CO_2 and temperature, and is digitally displayed with an LED panel. Both temperature and CO_2 are easily calibrated with the keypad. The automatic Thermal Conductivity (TC) controller measures the CO_2 level to within 0.5% (range is 0 to 20%).

The 2310 compact Personal CO_2 Incubator features an independent safety controller with audio/visual alarms. A heated outer door and tempered glass interior chamber door come standard. Corrosion-resistant, radiused stainless steel interior simplifies the cleaning process. The unit also features three stainless steel shelves, adjustable leveling feet, stainless steel humidity pan and a tubing connector kit with in-line CO_2 filter.

2310

Temperature Range: Ambient +8°C - 60°C
Temperature Uniformity: +/-0.3° @ 37°C
CO_2 Range: 0-20%

Cat. No.	Model	Style	No. of Shelves	Exterior W x D x H, in.	Interior W x D x H, in.	Cap. cu. ft.	Shipping Weight lbs.	Price Each
Thermal Conductivity								
35910-520	2310	Compact, 120V	3	21 x 22.5 x 26.5	15.75 x 15.75 x 12.5	1.8	175 lbs	$2,910.54
35910-522	2310-2	Compact, 220V	3	21 x 22.5 x 26.5	15.75 x 15.75 x 12.5	1.8	175 lbs	$3,150.83

Economical Continuous Flow VWR CO_2 Incubators

Models 5015/5025 incorporate heating elements on five sides of the chamber making them ideal for tissue culture and bacteriology. The incubators have a fan inside the air jacket, providing heat all around the samples and eliminating cold spots. This indirect heating system provides the best of convection and gravity heating without cross contamination and drying out samples.

Precision-bore CO_2 meters

Precision-bore, glass tube flow meters allow precise adjustment of CO_2 and air for concentrations up to 20%. After each door opening, the CO_2 purge system quickly restores the preheated CO_2 in the chamber to the desired level in just 15 seconds. An accessory air pump (required for operation) is sold separately.

Temperature Range: Ambient +8°C - 60°C
Temperature Uniformity: +/-0.5° @ 37°C
CO_2 Range: 0-20%

Cat. No.	Model	Style	No. of Shelves	Exterior W x D x H, in.	Interior W x D x H, in.	Cap. cu. ft.	Shipping Weight lbs.	Price Each
Continuous Flow CO_2 Meter								
35902-810	5015	Single, 120V	3	25.75 x 28.5 x 37	18 x 20 x 25.25	6	195 lbs	$2,773.03
13500-904	5015-2	Single, 220V	3	25.75 x 28.5 x 37	18 x 20 x 25.25	6	195 lbs	$3,081.15
35902-956	5025	Dual, 120V	6	25.75 x 28.5 x 73.5	*18 x 20 x 25.25	12	400 lbs	$5110.55
13500-906	5025-2	Dual, 220V	6	25.75 x 28.5 x 73.5	*18 x 20 x 25.25	12	400 lbs	$5,678.39

VWR Large Capacity CO_2 Incubators

Select Series Features

- Automatic, Infrared CO_2 Control
- Large, Glass Viewing Window
- Five Interior Electrical Outlets
- Easy-to-Clean Stainless Steel Interior

Large Capacity, Floor Model CO_2 Incubator

The Model 1927 provides 40 cu. ft. of space, yet only takes up 9.7 sq. ft. of floor space. Perfect for large volume applications and cell harvesting, the incubator has a reinforced chamber floor. This design assures that all major manufacture's roller apparatus fit.

Optimum Temperature Uniformity

The interior airflow is directed across each level of shelves evenly for precise uniformity. The shelves can be fully repositioned or removed completely for roller bottle applications. The door latch is adjustable to ensure a tight seal and to keep ambient room air out of the chamber.

State-of-the-Art Controls

The microprocessor temperature controller and the digital set point and display provide a high accuracy of ±0.1°C. An Automatic Infrared (IR) system precisely controls CO_2, provides fast CO_2 recovery after door openings and is not affected by changes in temperature or humidity.

Temperature Range: Ambient +8°C - 60°C
Temperature Uniformity: +/-0.5° @ 37°C
CO_2 Range: 0-20%

1917

Available in 28 & 40 cu.ft

Accommodates Roller Bottle Racks

Equipped with Five Interior Outlets

2 Year Warranty

Cat. No.	Model	Style	No. of Shelves	Exterior W x D x H, in.	Interior W x D x H, in.	Cap. cu. ft.	Shipping Weight lbs.	Price Each
Infrared								
14236-314	1917	Large, 120V	6	36 x 34 x 74	31 x 25 x 62	28	660 lbs	$9,044.84
14224-394	1917-2	Large, 220V	6	36 x 34 x 74	31 x 25 x 62	28	660 lbs	$10,049.83
35962-098	1927	Large, 120V	6	41 x 34 x 87	35 x 26 x 76.5	40	850 lbs	$12,098.33
35962-104	1927-2	Large, 220V	6	41 x 34 x 87	35 x 26 x 76.5	40	850 lbs	$13,442.59

VWR CO_2 Incubator Accessories

VWR CO_2 Incubator Quick Reference

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Standard Series Water Jacket - Page 5

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Cat. No.	Description	Price Each
Shelves		
35823-395	For All Models in 2300/2400 Series	$103.14
35910-724	For Model 2310	$59.08
35910-886	For Model 5015/5025	$103.14
89029-916	For 1927	$110.00
89029-914	For 1917	$105.00
89029-910	For 5216	$114.00
Stacking Plate		
89029-912	Stacking Plate for 5216	$179.00
Caster Platform		
14231-834	For All Models in 2300/2400 Series	$352.33
Chart Recorder		
55430-009	7 Day Temperature Only (-5 to 50°C)	$717.09
Miscellaneous		
13500-004	Replacment HEPA Filter for CO_2 Incubator	$56.70
35910-737	Replacment Inline CO_2 Filter	$14.55
35910-921	Air Pump for Continuos Flow Models 5015/5025	$142.73
35910-952	CO_2 Tank Switcher	$581.73
35910-908	CO_2 Alarm	$497.62
55850-414	CO_2 Regulator	$292.26
32033-000	Fyrite 0-20%	$396.82
13501-924	Humidity Pan	$151.80
61010-020	Reference Thermometer (-20 to 110°C)	$9.21

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VWR™

VWR Signature™ Infrared CO_2 Incubator

More Space for Large Volume Applications

14236-314

Signature PRODUCTS

VWR Signature™ Infrared CO_2 Incubators

- Automatic Infrared CO_2 Control
- Glass Viewing Window
- Five Interior Electrical Outlets
- Easy-to-Clean Interior and Shelves
- VWR 2 Year Parts and Labor Warranty▲

Our infrared CO_2 incubator, Model 1917 (14236-314 - 120V/14224-394 - 220V) provides 28 cu. ft. (793L) of incubation space yet takes up only 9.2 sq. ft. of floor space. These units are ideal for high volume applications and cell harvesting.

Understanding the importance of verification in these applications, a 4-20 mAmp output continuously transmits CO_2 and temperature levels to the display. Sensors with audible/visual alarms monitor set points. The IR CO_2 sensor immediately reacts to changes in CO_2 levels allowing for fast recovery even in chambers this size.

These units feature a stainless steel interior and shelves, positive door latch, double-wall insulation, powder-coated paint exterior, and are supplied standard with five 1-amp interior electrical outlets and a glass viewing window.

These units have a reinforced flat floor specifically designed for easy use of a roller bottle apparatus.

Also available Model 1927 (35962-098 - 120V and 35962-104 - 220V) provides a space of 40 cu. ft. (1133L).

Specifications Model 14236-314 - 120V / 14224-394 - 220V

Chamber Capacity	793 liters / 28 cu. ft.	Ext. Dimensions W x D x H	37 x 36 x 74 in. (94 x 91.5 x 188 cm)
Temperature Range	Ambient +5°C to 60°C	Int. Dimensions W x D x H	33 x 27 x 62 in. (84 x 68 x 158 cm)
Temperature Uniformity	±0.5°C @ 37°C	Electrical Requirements	
Temp. Display Res.	±0.1°C	Watts/Amps	
CO_2 Sensor	Infrared	14236-314 - 120V	1800 / 15
CO_2 Range	0-20%	14224-394 - 220V	2200 / 10
CO_2 Display Res.	±0.1°C	Cycle/Phase	50-60Hz / Single
Uniformity	±0.1% @ 5%	Fitting Sizes (Diameter)	
Recovery Rate to 5%	< 3 minutes	CO_2 Sample Port	0.95 cm / 3/8 in.
Alarm Conditions - Temp	±1°C	CO_2 Inlet Port	0.95 cm / 3/8 in.
Alarm Conditions - CO_2	±1%	Shipping Weight	500 lbs. (227 kg)
Shelves Supplied	6		
Shelves Maximum	30		

Cat No.	Description	Each
14236-314 - 120V	Reach-in Infrared CO_2 Incubator, 28 cu. ft. (793L)	$8,375.00
14224-394 - 220V	Same as above except 220V	

▲ Warranty details are available at www.vwr.com

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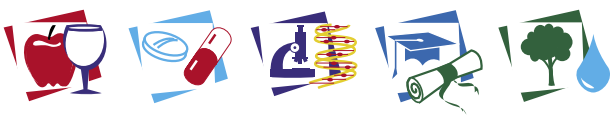

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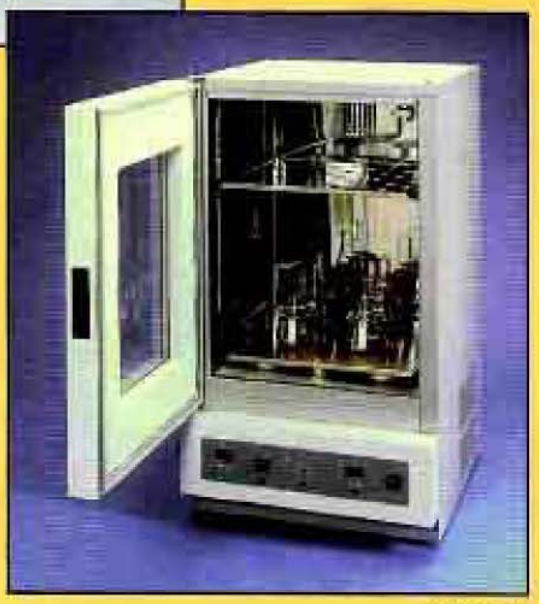
VWR Signature™ Shaking Incubators

Shake things up with VWR Signature Shaking Incubators

14004-300 (NEW)



35963-031

VWR Signature™ Shaking Incubators

- A unique adjustable counterbalance system provides vibration-free operation regardless of load/capacity.
- Large, easy to read LED displays.
- Individual PID microprocessor controllers for continuous display of temperature and shaking speed.
- A brushless DC motor with proven drive design adds to their durability.

Model 1570

Compact design saves space and transparent hood allows for easy viewing and lifts up for easy access. Large chamber accommodates six liter flasks and maintains accurate temperature uniformity.

Model 1575 & 1575R

A large six cubic foot chamber facilitates throughput and shelves in the top provide space for cell and tissue cultures. The refrigerated model supports insect cell culture and entomology studies.

Specifications	Model 1570	Model 1575	Model 1575R
Temperature Range	Ambient +5°C to 60°C	Ambient +5°C to 60°C	Ambient -20°C to 60°C
Temperature Uniformity	±0.5°C @ 37°C	±0.5°C @ 37°C	±0.5°C @ 37°C
Chamber Volume	4.0 cft.	5.8 cft.	5.8 cft.
Shaking Speed	40-400 rpm, ±1 rpm	40-400 rpm, ±1 rpm	40-400 rpm, ±1 rpm
Exterior Dimensions WxHxD, inches (cm)	21.25x27x23.5 (53.97x68.58x59.69)	23x41.5x27.25 (58.4x105.4x69.2)	23x41.5x27.25 (58.4x105.4x69.2)
Interior Dimensions WxHxD, inches (cm)	19x17.25x19.5 (48.26x43.81x49.53)	19x26x20 (48.3x66x50.8)	19x26x20 (48.3x66x50.8)
Platform Dimensions WxD, inches (cm)	17.25x17.25 (43.81x43.81)	17.25x17.25 (43.81x43.81)	17.25x17.25 (43.81x43.81)
Electrical Requirements	120V/230VAC, 50/60Hz, 1100W	120V/230VAC, 50/60Hz, 1100W	120V/230VAC, 50/60Hz, 1100W
Shipping Weight	220 lbs. (100 kg)	300 lbs. (136 kg)	300 lbs. (136 kg)
Cat. No.	**14004-300**	**35962-091**	**35962-093**
Pricing	$4,995.00	$5,795.00	$6,995.00

Accessory Flask Clamps

Cat. No.	For Flask Size	Unit Capacity	Each	Cat. No.	For Flask Size	Unit Capacity	Each
52202-564	25 ml	49	$12.00	52202-570	250 ml	18	$17.00
52202-566	50 ml	49	$14.00	52202-572	500 ml	9	$19.00
52202-568	1255 ml	25	$15.00	52202-574	1000 ml	6	$28.00

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VWR Constant Temperature Ovens

When you want to put heat on, there's no better choice than VWR Ovens

Clockwise from left: Model 1685, Model 1380FM and Model 1410

Model 1670, 1675, 1680, 1685, 1690

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VWR Signature™ High Performance Horizontal Airflow Ovens

Designed for continuous drying at temperatures up to 325°C

The VWR Signature High Performance Ovens feature a horizontal airflow pattern that dries, bakes or cures...no matter what size the load. They offer precise state-of-the-art temperature control.

Horizontal airflow uses a turbo blower that re-circulates air over the heating element, providing fast heat up and recovery times; and ensuring a more rapid and efficient rate of drying. By forcing continuously warmed air into the chamber, the turbo blower assures uniform heating across all shelves and to every area of the chamber, eliminating concerns about obstructed air, regardless of how the shelves are loaded.

This true one-pass airflow combined with large adjustable intake and exhaust vents makes it easy to adapt the oven to specific tasks. It also makes these the fastest, most energy efficient ovens on the market today.

Programmable temperature controller.

The Watlow microprocessor-based controller provides 24-step ramp and soak capability to an accuracy of 0.1˚C. Other ramping operations include ramp-rate or time-based programming, guaranteed soak deviation, program looping and program status selection after power outages. Easy, non-ramping set point operation is also available.

Energy efficient to help lower operating costs.

To maintain temperature uniformity and stop heat loss, VWR Signature Series Ovens use a 3½-inch thick, double-layer-insulating barrier of high-density alumina silicate and high temperature fiberglass around all five sides of the chamber. The double-layer configuration will not break down or settle from heat exposure, so years from now you still expect this oven to perform. What's more, seams are staggered to avoid gaps and subsequent heat loss, thus ensuring the oven is cool to the touch. A high temperature silicone rubber door seal eliminates air leakage. In addition, the door latch and hinges are user adjustable to maintain a better seal as metal expands and contracts over the life of the oven. These features allow VWR Ovens to finish their work when you do, so you don't need to leave them on overnight.

Low maintenance motor.

Motor burn out is a common source of oven down time. The unique VWR design helps eliminate this problem by using a second fan to dissipate heat away from motor bearings. Since bigger bearings generally operate longer than little ones, VWR uses an oversized motor with oversize bearings to increase the longevity of the motor. Furthermore, to minimize heat transfer from the oven chamber to the motor, a half-inch diameter stainless steel shaft replaces the metal shaft that comes standard with motors because stainless is not a good conductor.

Safety features.

The independent over-temperature safety feature is user adjustable and protects the unit against damage to contents and burnout in the unlikely event that the main controller fails. The sealed membrane touch-pad control panel guards against any harm to the electronics.

Key features:

- Type-304 stainless steel interior and exterior for maximum corrosion resistance
- Durable powder coat paint exterior finish
- Three-inch intake and exhaust ports
- Adjustable stainless steel shelves
- Power exhaust accessory can be plugged into unit and run by Watlow controller
- Chart recorder outlet available on Models 1675, 1680, 1685 and 1690
- 24 month warranty on parts and labor

Cat. No.	Model	Capacity, ft.³	Temperature Style	Range	Heat Up, Uniformity	Recovery, Minutes	Minutes	Dimensions*, W x D x H in.	Watts/Amps
VWR SIGNATURE® HIGH PERFORMANCE HORIZONTAL AIRFLOW OVENS									
52201-754	1670	4.4	Medium, 2 Shelves	40C to 260°C	±0.5¡C @ 100¡C ±1.4¡C @ 200¡C ±2.2¡C @ 260¡C	15 @ 100¡C 25 @ 200¡C	5 @ 150¡C 25 @ 200¡C	Int: 20 x 20 x 19 Ext: 32.5 x 27.25 x 38	3000/12.5
52202-054	1675	10.4	Large, 3 Shelves	40C to 260°C	±1.0¡C @ 100¡C ±1.5¡C @ 200¡C ±2.2¡C @ 260¡C	15 @ 100¡C 25 @ 200¡C	5 @ 150¡C 25 @ 200¡C	Int: 30 x 20 x 30 Ext: 44 x 29 x 57	6300/26.5
52202-203	1680	14.6	Large, 2 Door, 6 Shelves	40C to 260°C	±1.0¡C @ 100¡C ±1.5¡C @ 200¡C ±2.2¡C @ 260¡C	15 @ 100¡C 25 @ 200¡C	5 @ 150¡C 25 @ 200¡C	Int: 42 x 20 x 30 Ext: 59 x 29 x 57	6300/26.5
52202-258	1685	25.0	Floor, 6 Shelves	40C to 260°C	±0.5¡C @ 100¡C ±1.4¡C @ 200¡C ±2.5¡C @ 260¡C	15 @ 100¡C 25 @ 200¡C	5 @ 150¡C 25 @ 200¡C	Int: 32 x 25 x 67.25 Ext: 43 x 33 x 83	11,900/49.6
52202-509	1690	37.9	Floor, 2 Door, 12 Shelves	40C to 260°C	±0.5¡C @ 100¡C ±1.4¡C @ 200¡C ±2.5¡C @ 260¡C	15 @ 100¡C 25 @ 200¡C	7 @ 150¡C 25 @ 200¡C	Int: 44 x 25 x 54 Ext: 68 x 33 x 80	11,900/49.6
16000-220	1680-3	14.6	Large, 2 Door, 6 Shelves, 3-Phase	40C to 260°C	±1.0¡C @ 100¡C ±1.5¡C @ 200¡C ±2.2¡C @ 260¡C	15 @ 100¡C 25 @ 200¡C	5 @ 150¡C 25 @ 200¡C	Int: 42 x 20 x 30 Ext: 59 x 29 x 57	5000/12
16000-222	1685-3	25.0 3-Phase	Floor, 6 Shelves,	40C to 260°C	±0.5¡C @ 100¡C ±1.4¡C @ 200¡C ±2.5¡C @ 260¡C	15 @ 100¡C 25 @ 200¡C	5 @ 150¡C 25 @ 200¡C	Int: 32 x 25 x 67.25 Ext: 43 x 33 x 83	10,000/24
16000-224	1690-3	37.9	Floor, 2 Door, 12 Shelves, 3-Phase	40C to 260°C	±0.5¡C @ 100¡C ±1.4¡C @ 200¡C ±2.5¡C @ 260¡C	15 @ 100¡C 25 @ 200¡C	7 @ 150¡C 25 @ 200¡C	Int: 44 x 25 x 54 Ext: 68 x 33 x 80	10,000/24

**Exterior dimensions include handle and exhaust port. ¥ Volts: 208/230 ¥ Cycle: 50/60Hz*
Units must be hardwired. Power cord not supplied.

See page 19 for price information.

VWR Signature™ Shaking Incubators

- A unique adjustable counterbalance system provides vibration-free operation regardless of load/capacity.
- Large, easy to read LED displays.
- Individual PID microprocessor controllers for continuous display of temperature and shaking speed.
- A brushless DC motor with proven drive design adds to their durability.

Model 1570

Compact design saves space and transparent hood allows for easy viewing and lifts up for easy access. Large chamber accommodates six liter flasks and maintains accurate temperature uniformity.

Model 1575 & 1575R

A large six cubic foot chamber facilitates throughput and shelves in the top provide space for cell and tissue cultures. The refrigerated model supports insect cell culture and entomology studies.

Specifications	Model 1570	Model 1575	Model 1575R
Temperature Range	Ambient +5°C to 60°C	Ambient +5°C to 60°C	Ambient -20°C to 60°C
Temperature Uniformity	±0.5°C @ 37°C	±0.5°C @ 37°C	±0.5°C @ 37°C
Chamber Volume	4.0 cft.	5.8 cft.	5.8 cft.
Shaking Speed	40-400 rpm, ±1 rpm	40-400 rpm, ±1 rpm	40-400 rpm, ±1 rpm
Exterior Dimensions WxHxD, inches (cm)	21.25x27x23.5 (53.97x68.58x59.69)	23x41.5x27.25 (58.4x105.4x69.2)	23x41.5x27.25 (58.4x105.4x69.2)
Interior Dimensions WxHxD, inches (cm)	19x17.25x19.5 (48.26x43.81x49.53)	19x26x20 (48.3x66x50.8)	19x26x20 (48.3x66x50.8)
Platform Dimensions WxD, inches (cm)	17.25x17.25 (43.81x43.81)	17.25x17.25 (43.81x43.81)	17.25x17.25 (43.81x43.81)
Electrical Requirements	120V/230VAC, 50/60Hz, 1100W	120V/230VAC, 50/60Hz, 1100W	120V/230VAC, 50/60Hz, 1100W
Shipping Weight	220 lbs. (100 kg)	300 lbs. (136 kg)	300 lbs. (136 kg)
Cat. No.	**14004-300**	**35962-091**	**35962-093**
Pricing	$4,995.00	$5,795.00	$6,995.00

Accessory Flask Clamps

Cat. No.	For Flask Size	Unit Capacity	Each	Cat. No.	For Flask Size	Unit Capacity	Each
52202-564	25 ml	49	$12.00	52202-570	250 ml	18	$17.00
52202-566	50 ml	49	$14.00	52202-572	500 ml	9	$19.00
52202-568	1255 ml	25	$15.00	52202-574	1000 ml	6	$28.00

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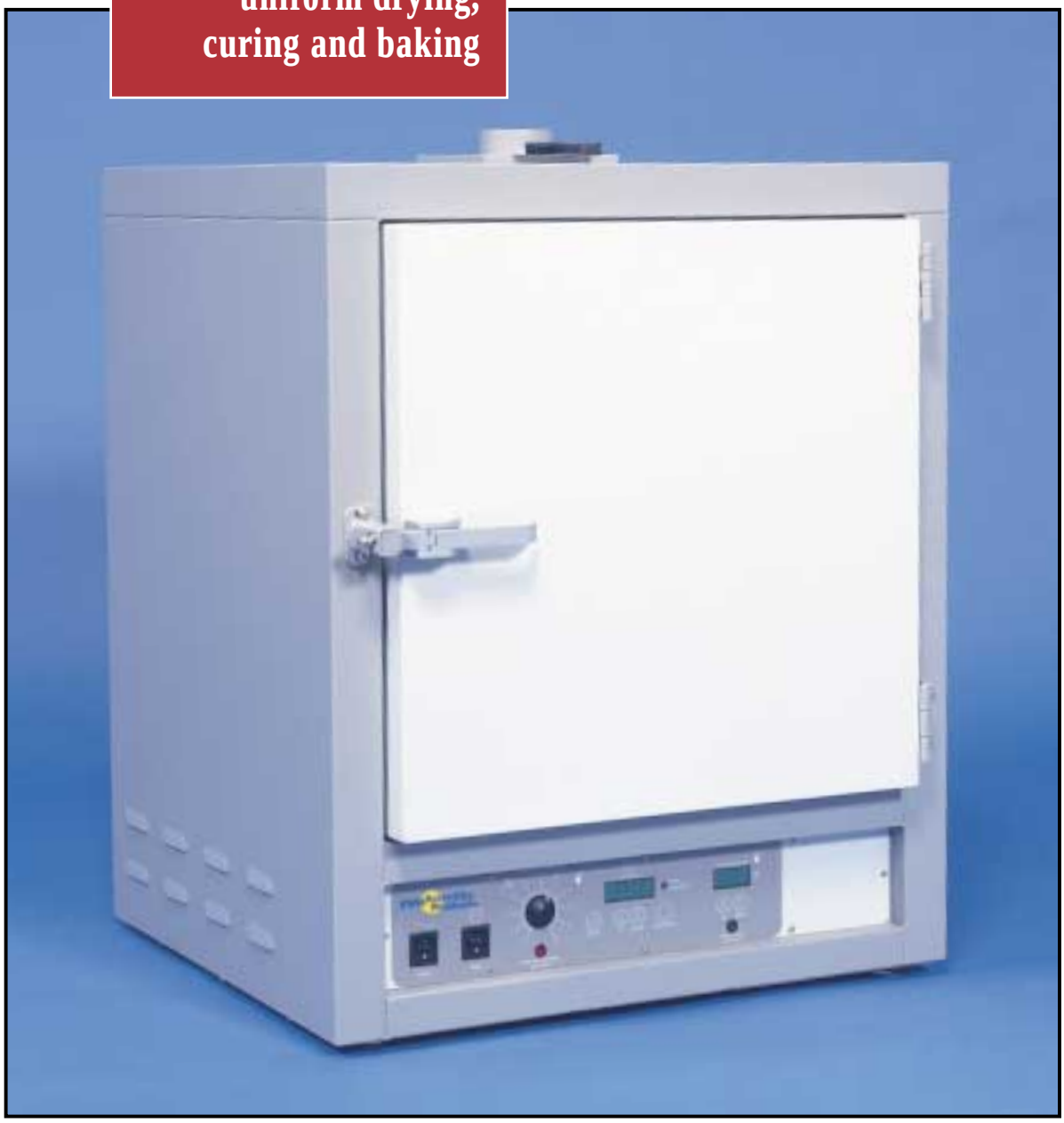
VWR Signature™ Horizontal Airflow Ovens

True horizontal airflow for fast uniform drying, curing and baking

The VWR Signature Horizontal Airflow Ovens use the same turbo blower system as our high performance models to deliver optimal temperature uniformity and recovery. The built-in microprocessor technology ensures stable control without temperature overshoot.

Model 1350FM



Unique airflow design.

With the true horizontal airflow design, heated air is directed into the ductwork on the right side of the oven. This slightly pressurized air escapes through the small perforations in the chamber wall, flows across each shelf picking up moisture, and is gently suctioned through large openings on the opposite chamber wall. This pattern encourages fast, uniform drying even when your shelves are loaded.

Steady, reliable, safe.

The microprocessor control capability assures optimal stability and allows for accurate temperature control. Temperature and time set points are even held in memory during power outages–a real time-saving advantage.

Convenient digital timer.

The digital LED electronic timer is conveniently located on the control panel and gives the user the capability of automatically turning off the oven at the end of an application cycle. The timer has a range of 1 minute to 99 hours/59 minutes and is activated by an independent ON/OFF switch.

Flexibility.

Ovens are used for three main purposes: drying, baking and curing. By positioning the damper on the exhaust port accordingly, the user can accomplish all three types of applications. The exhaust port is 3-inches indiameter, further aiding in drying time.

Built-in safety features.

There are no exposed heating elements in this oven series. This eliminates danger to the user and damage to the oven from spills within the chamber. An independent overtemperature safety controller with its own sensor provides extra protection.

Key features:

- True horizontal airflow pattern
- Three inch adjustable exhaust port
- Stainless steel interior and shelves
- Durable powder coat paint exterior finish
- Adjustable door latch and hinges
- Digital electronic timer
- Wrap around insulation for excellent heat retention
- 24 month warranty on parts and labor

Cat. No.	Model	Capacity, ft.³	Style	Temperature Range	Uniformity	Heat Up, Minutes	Recovery, Minutes	Dimensions*, W x D x H in.	Watts/ Amps
VWR SIGNATURE HORIZONTAL AIRFLOW OVENS									
52201-069	1330FM	1.6	Small, 2 Shelves, 110V	40°C to 240°C	±1.5°C @ 150°C	10 @ 150°C	6 @ 150°C	Int: 13 x 14 x 14.75 Ext: 21.25 x 23.75 x 33	1750/14.6
52201-084	1330FM-2	1.6	Small, 2 Shelves, 220V	40°C to 240°C	±1.5°C @ 150°C	10 @ 150°C	6 @ 150°C	Int: 13 x 14 x 14.75 Ext: 21.25 x 23.75 x 33	2350/9.8
52201-070	1350FM	4.0	Medium, 2 Shelves, 110V	40°C to 240°C	±1.5°C @ 150°C	10 @ 150°C	6 @ 150°C	Int: 18.25 x 19 x 16.5 Ext: 27 x 25.5 x 34.75	1950/16.3
52201-086	1350FM-2	4.0	Medium, 2 Shelves, 220V	40°C to 240°C	±1.5°C @ 150°C	10 @ 150°C	6 @ 150°C	Int: 18.25 x 19 x 16.5 Ext: 27 x 25.5 x 34.75	2350/9.8
52201-071	1370FM	5.9	Large, 2 Shelves, 110V	40°C to 240°C	±1.5°C @ 150°C	10 @ 150°C	6 @ 150°C	Int: 23 x 20 x 18.5 Ext: 32.5 x 28 x 36.25	1950/16.3
52201-088	1370FM-2	5.9	Large, 2 Shelves, 220V	40°C to 240°C	±1.5°C @ 150°C	10 @ 150°C	6 @ 150°C	Int: 23 x 20 x 18.5 Ext: 32.5 x 28 x 36.25	2350/9.8

**Exterior dimensions include handle and exhaust port. • Cycle: 50/60Hz • Phase: Single*

See page 19 for price information.

VWRbrand™ Forced Air Ovens

Durable, dependable general purpose ovens

These forced air ovens offer the benefits of mechanical convection but at an economical price.

Model 1321F

Optimum uniformity.

The forced, blower-assisted airflow design offers excellent temperature uniformity and fast recovery. A turbo blower and heavy-duty motor combine to direct air over the shelves and samples for even, consistent drying, curing and baking. Especially ideal for glassware drying.

Key features:

- Three-inch adjustable exhaust port
- Stainless steel shelves adjustable on ½" increments
- Independent overtemperature safety
- High temperature silicone door seal
- No exposed heating elements
- Wrap around insulation for excellent heat retention
- Durable powder coat paint exterior finish
- Digital timer (Models 1380FM, 1390FM)
- Thermometer and clip supplied (Models 1321F, 1325F, 1327F)
- 24 month warranty on parts and labor

Optimum control.

The Models 1321F, 1325F, and 1327F feature an hydraulic temperature control, while the large capacity Models 1380FM and 1390FM have a microprocessor controller. The independent overtemperature safety feature is user adjustable and provides added safety for the user.

Broad product offering.

There are several models to choose from in the forced air product line, both in size and control. The large capacity units are perfect for high volume sample and drying applications, including production processes.

Cat. No.	Model	Capacity, ft.³	Style	Temperature Range	Uniformity	Heat Up, Minutes	Dimensions*, W x D x H in.	Watts/Amps
VWRbrand FORCED AIR OVENS								
16000-208	1321F	2.0	Small, 1 Shelves, 110V	40°C to 200°C	±3.5°C @ 100°C	22 @ 100°C	Int: 16.875 x 12.5 x 17 Ext: 20.25 x 21 x 25	800/6.6
16000-210	1321F-2	2.0	Small, 1 Shelves, 220V	40°C to 200°C	±3.5°C @ 100°C	22 @ 100°C	Int: 16.875 x 12.5 x 17 Ext: 20.25 x 21 x 25	800/3.3
16000-212	1325F	4.0	Medium, 2 Shelves, 110V	40°C to 200°C	±3.5°C @ 100°C	22 @ 100°C	Int: 15.875 x 17.5 x 22 Ext: 23.25 x 20 x 31	800/6.6
16000-214	1325F-2	4.0	Medium, 2 Shelves, 220V	40°C to 200°C	±3.5°C @ 100°C	22 @ 100°C	Int: 15.875 x 17.5 x 22 Ext: 23.25 x 20 x 31	800/3.3
16000-216	1327F	6.0	Large, 2 Shelves, 110V	40°C to 200°C	±3.5°C @ 100°C	22 @ 100°C	Int: 19.875 x 17.5 x 28 Ext: 24 x 23.625 x 37	1050/8.8
16000-218	1327F-2	6.0	Large, 2 Shelves, 220V	40°C to 200°C	±3.5°C @ 100°C	22 @ 100°C	Int: 19.875 x 17.5 x 28 Ext: 24 x 23.625 x 37	1050/4.4
52201-075	1380FM	13.9	Large, 3 Shelves, 110V, Microprocessor	40°C to 200°C	±1.8°C @ 100°C	14 @ 150°C	Int: 31 x 25 x 31 Ext: 37 x 35 x 48	3950/16.5
52201-077	1390FM	27.8	Large, 6 Shelves, 220V, Microprocessor	40°C to 200°C	±1.8°C @ 100°C	14 @ 150°C	Int: 31 x 25 x 62 Ext: 37 x 35 x 80	5950/25

**Exterior dimensions include handle and exhaust port. • Cycle: 50/60Hz • Phase: Single*
NOTE: Models 1380FM and 1390FM available only in 220V current.

See page 19 for price information.

Microprocessor technology and a unique air duct system provide you with outstanding temperature control and uniformity in these VWR Signature Gravity Convection ovens.

Stability and safety.

The microprocessor controller with push button calibration provides precise temperature and time setability. The controller even retains set points during power outages. The temperature and timer are displayed digitally on an easy to read LED.

Digital timer.

The digital LED electronic timer gives the user the capability of automatically turning off the oven at the end of an application cycle. The timer has a range of 1 minute to 99 hours/59 minutes and is activated by an independent ON/OFF switch.

Unique heating system.

As air is heated in the gravity convection design, it rises to the top of the oven. The heated air is directed through an air duct system and enters the chamber through slots above each shelf. Even when shelves are fully loaded, this exclusive feature creates many different flow patterns to optimize uniformity. The exhaust port, located on top of the oven, aids in venting the oven and allows for flexibility in drying time.

Built-in safety.

A solid chamber floor eliminates danger to the user and prevents damage to the oven from spills, as there are no exposed elements. A resettable circuit breaker is standard in case of electrical malfunction. The overtemperature safety is UL approved, user adjustable and independent of the main temperature controller.

Key features:

- Microprocessor control system
- Digital electronic timer
- Three-inch adjustable exhaust port
- Stainless steel interior and shelves
- Durable powder coat paint exterior finish
- Adjustable door latch and hinges
- Wrap around insulation for excellent heat retention
- 24 month warranty on parts and labor

Model 1350GM

VWR Signature™ Gravity Convection Ovens

Designed for optimal temperature uniformity

Cat. No.	Model	Capacity, ft.³	Style	Temperature Range	Uniformity	Heat Up, Minutes	Recovery, Minutes	Dimensions*, W x D x H in.	Watts/ Amps
VWR SIGNATURE GRAVITY CONVECTION OVENS									
52200-205	1330GM	1.6	Small, 2 Shelves, 110V	40°C to 240°C	±2.0°C @ 150°C	15 @ 150°C	10 @ 150°C	Int: 13 x 14 x 14.75 Ext: 21.25 x 23.75 x 33	1400/11.7
52200-216	1330GM-2	1.6	Small, 2 Shelves, 220V	40°C to 240°C	±2.0°C @ 150°C	15 @ 150°C	10 @ 150°C	Int: 13 x 14 x 14.75 Ext: 21.25 x 23.75 x 33	2000/8.4
52200-209	1350GM	4.0	Medium, 2 Shelves, 110V	40°C to 240°C	±2.0°C @ 150°C	15 @ 150°C	10 @ 150°C	Int: 18.25 x 19 x 16.5 Ext: 27 x 25.5 x 34.75	1600/13.4
52200-218	1350GM-2	4.0	Medium, 2 Shelves, 220V	40°C to 240°C	±2.0°C @ 150°C	15 @ 150°C	10 @ 150°C	Int: 18.25 x 19 x 16.5 Ext: 27 x 25.5 x 34.75	2000/8.4
52200-215	1370GM	5.9	Large, 2 Shelves, 110V	40°C to 240°C	±2.0°C @ 150°C	15 @ 150°C	10 @ 150°C	Int: 23 x 20 x 18.5 Ext: 32.5 x 28 x 36.25	1600/13.4
52200-220	1370GM-2	5.9	Large, 2 Shelves, 220V	40°C to 240°C	±2.0°C @ 150°C	15 @ 150°C	10 @ 150°C	Int: 23 x 20 x 18.5 Ext: 32.5 x 28 x 36.25	2000/8.4

**Exterior dimensions include handle and exhaust port. • Cycle: 50/60Hz. • Phase: Single*

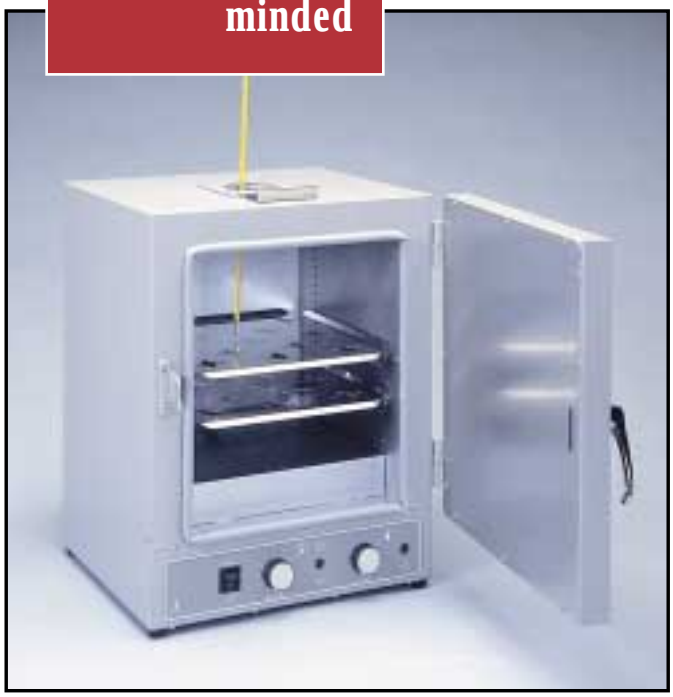
See page 19 for price information.

VWRbrand™ Gravity Convection Ovens

Priced for the budget minded

Economically priced, yet have the features required for professional results in the lab. As with all VWR ovens, these units are durable and built to last.

Model 1310



Reliable performance.

These VWRbrand ovens feature a gravity convection design for efficient heating. The double wall insulation and two inches of industrial fiberglass insulation help to minimize heat loss. The low watt density heaters keep temperatures uniform to ±4.0°C and require only 750 watts...keeping your energy consumption down.

Analog design.

A hydraulic temperature controller regulates a temperature range of 40 to 200°C. An independent hydraulic overtemperature safety controller provides added operating safety.

Key features:

- Three-inch adjustable exhaust port
- Stainless steel shelves adjustable on ½" increments
- Independent hydraulic overtemperature safety
- High temperature silicone door seal
- No exposed heating elements
- Wrap around insulation for excellent heat retention
- Durable powder coat paint exterior finish
- Thermometer and clip supplied
- CSA approved
- 24 month warranty on parts and labor

Cat. No.	Model	Capacity, ft.³	Style	Temperature Range	Uniformity	Heat Up, Minutes	Dimensions*, W x D x H in.	Watts/Amps
VWRbrand GRAVITY CONVECTION OVENS								
52201-297	1310	1.0	Small, 1 Shelf, 110V	40°C to 200°C	±4.0°C @ 100°C	22@100°C	Int: 12 x 12 x 12 Ext: 16 x 17.5 x 18.5	750/6.25
52201-298	1310-2	1.0	Small, 1 Shelf, 220V	40°C to 200°C	±4.0°C @ 100°C	22@100°C	Int: 12 x 12 x 12 Ext: 16 x 17.5 x 18.5	800/3.3
52201-300	1320	2.0	Small, 2 Shelves, 110V	40°C to 200°C	±4.0°C @ 100°C	22@100°C	Int: 17 x 12 x 17 Ext: 21 x 17.5 x 23.5	750/6.25
52201-301	1320-2	2.0	Small, 2 Shelves, 220V	40°C to 200°C	±4.0°C @ 100°C	22@100°C	Int: 17 x 12 x 17 Ext: 21 x 17.5 x 23.5	800/3.3
16000-200	1324	4.0	Medium, 2 Shelves, 110V	40°C to 200°C	±3.5°C @ 100°C	22@100°C	Int: 15.875 x 17.5 x 22 Ext: 23.25 x 20 x 31	750/6.3
16000-202	1324-2	4.0	Medium, 2 Shelves, 220V	40°C to 200°C	±3.5°C @ 100°C	22@100°C	Int: 15.875 x 17.5 x 22 Ext: 23.25 x 20 x 31	750/3.1
16000-204	1326	6.0	Large, 2 Shelves, 110V	40°C to 200°C	±3.5°C @ 100°C	22@100°C	Int: 19.875 x 17.5 x 28 Ext: 24 x 23.625 x 37	1000/8.3
16000-206	1326-2	6.0	Large, 2 Shelves, 220V	40°C to 200°C	±3.5°C @ 100°C	22@100°C	Int: 19.875 x 17.5 x 28 Ext: 24 x 23.625 x 37	1000/4.2

**Exterior dimensions include handle and exhaust port. • Cycle: 50/60Hz • Phase: Single*

See page 19 for price information.

VWRbrand™ Utility Ovens

Reliable, low cost gravity convection design

Utility ovens feature a welded steel, insulated wall construction to keep the interior temperature uniform to ±4.0°C. Suitable for small work volumes.

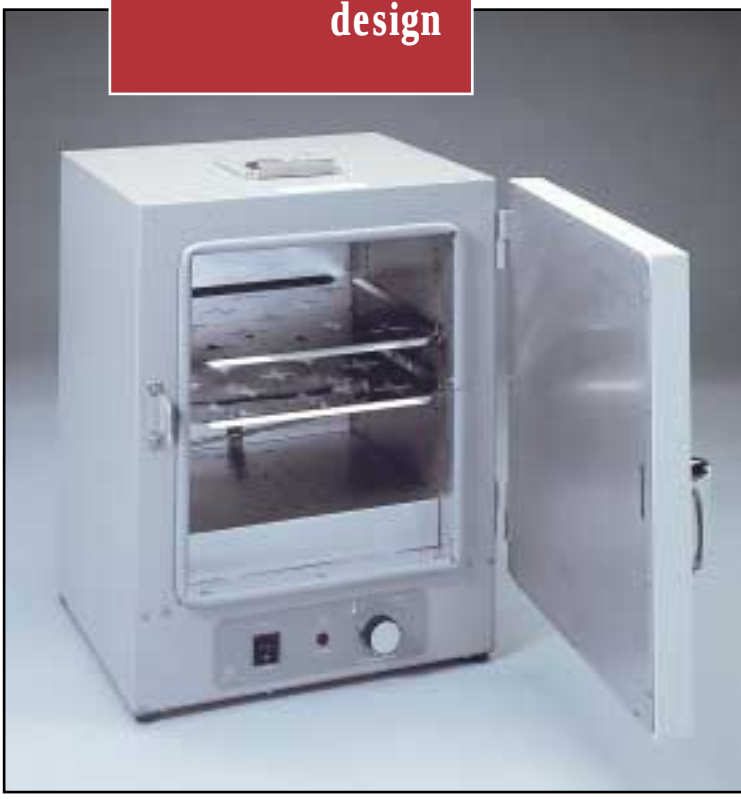
Efficient performance.

Ovens achieve peak efficiency with less energy, lowering your electric costs. Temperature range is 40 to 180°C, regulated by a timed temperature controller. The bi-metal overtemperature safety feature protects against the possible main controller failure.

Key features:

- Three-inch adjustable exhaust port
- Flat punched shelves adjustable on ½" increments
- Independent bi-metal overtemperature safety
- Two inches of fiberglass insulation
- No exposed heating elements
- Safety circuit breaker
- Durable powder coat paint exterior finish
- Thermometer and clip supplied
- CSA approved
- 24 month warranty on parts and labor

Model 1300U



Cat. No.	Model	Capacity, ft.³	Temperature Style	Range	Dimensions*, Uniformity	W x D x H in.	Watts/ Amps
VWRbrand UTILITY OVENS							
52200-501	1300U	1.0	Small, 1 Shelf, 110V	40°C to 180°C	±6.0°C @ 100°C	Int: 12 x 12 x 12 Ext: 16 x 17.5 x 18.5	550/4.6
52200-502	1300U-2	1.0	Small, 1 Shelf, 220V	40°C to 180°C	±6.0°C @ 100°C	Int: 12 x 12 x 12 Ext: 16 x 17.5 x 18.5	500/2.1
52200-534	1305U	2.0	Small, 1 Shelf, 110V	40°C to 180°C	±6.0°C @ 100°C	Int: 17 x 12 x 17 Ext: 21 x 17.5 x 23.5	550/4.6
52200-535	1305U-2	2.0	Small, 1 Shelf, 220V	40°C to 180°C	±6.0°C @ 100°C	Int: 17 x 12 x 17 Ext: 21 x 17.5 x 23.5	500/2.1

**Exterior dimensions include handle and exhaust port. • Cycle: 50/60Hz • Phase: Single*

See page 19 for price information.

VWR Signature™ Safety Ovens

Designed to meet your strictest safety needs

Manufactured with additional features to help you better meet your safety requirements.

1330GMS

Unique safety design.

Built to the same specifications as the VWR Signature Ovens, these units feature a blow out back panel to better meet safety standards. The blow out back panel is designed to release in the event of an explosion within the chamber, directing the force away from the user and the lab. The user adjustable overtemperature control is an added safety feature.

Accurate control and heating.

All models are microprocessor controlled and the temperature is displayed digitally on an LED. The Model 1330GMS features a gravity convection design, while Model 1330FMS and 1350FMS are true horizontal airflow ovens.

Key features:

- Unique blow out back panel
- Microprocessor temperature controller
- Stainless steel interior and shelves
- Three-inch exhaust port
- Horizontal airflow or gravity convection
- Durable powder coat paint exterior finish
- Independent overtemperature safety
- 24 month warranty on parts and labor

Cat. No.	Model	Capacity, ft.³	Style	Temperature Range	Uniformity	Heat Up, Minutes	Recovery, Minutes	Dimensions*, W x D x H in.	Watts/ Amps
VWR SIGNATURE SAFETY OVENS									
52201-212	1330GMS	1.6	Small, 2 Shelves, 110V	40°C to 240°C	±1.5°C @ 150°C	15 @ 150°C	6 @ 150°C	Int: 13.25 x 14.5 x 14.75 Ext: 22 x 22 x 33	1400/11.7
52201-214	1330FMS	1.6	Small, 2 Shelves, 110V	40°C to 240°C	±1.5°C @ 150°C	10 @ 150°C	6 @ 150°C	Int: 13 x 14 x 14.75 Ext: 21.25 x 23.75 x 33	1750/14.6
52201-216	1350FMS	4.0	Medium, 2 Shelves, 110V	40°C to 240°C	±1.5°C @ 150°C	10 @ 150°C	6 @ 150°C	Int: 18.25 x 19 x 16.5 Ext: 27 x 25.5 x 34.75	1950/16.3

**Exterior dimensions include handle and exhaust stack. • Cycle: 50/60 Hz • Phase: Single*

See page 19 for price information.

VWR Signature™ Cleanroom Ovens

Special features to protect your products and cleanroom against contamination

Constructed with the same advanced technology as our horizontal airflow ovens, these two cleanroom units feature a true horizontal airflow design via a turbo blower, low maintenance motor, energy-efficient insulation, programmable digital controller and more.

Encapsulated insulation.

Insulation is encapsulated between fully welded air-tight seams so fibers cannot invade the chamber and contaminate your work.

Nitrogen purging system.

A nitrogen supply inlet is standard on both models. This creates a dry, oxygen-free atmosphere in order to reduce product oxidation. The pressurizing action of the nitrogen also inhibits the entry of contaminants.

Programmable controller.

The Watlow PID (Proportional Integral Differential) controller provides 24-step ramp and soak with an accuracy of 0.1˚C and multiple levels of access. The controller can input up to a 24-step program with time-based or ramp-rate programming.

Class 100 air.

The Model 1601 is equipped with a high efficiency particulate air (HEPA) filter to screen out 95% of the airborne particles as small as 0.3 microns. Plus, the stainless steel interior surface minimizes particulates as well.

Key features:

- Nitrogen purging capability
- Type-304 stainless steel interior and exterior parts
- Sealed membrane touch pad control panel protects electronics
- Encapsulated insulation
- Programmable temperature controller
- Three-inch adjustable intake and exhaust ports
- User adjustable overtemperature safety
- 24 month warranty on parts and labor

Model 1601

Cat. No.	Model	Capacity, ft.³	Style	Temperature Range†	Uniformity	Heat Up, Minutes	Recovery, Minutes	Dimensions*, W x D x H in.	Watts/ Amps
VWR SIGNATURE CLEANROOM OVENS									
52201-721	1601	3.7	Single Door, 2 Shelves, HEPA Filter	40°C to 200°C	±0.7°C @ 100°C ±1.8°C @ 200°C ±2.2°C @ 260°C	15 @ 100°C 25 @ 200°C	6 @ 150°C, 8 @ 200°C	Int: 16 x 16 x 19 Ext: 32.5 x 27.25 x 38	4200/16.7
52201-710	1602	4.4	Single Door, 2 Shelves	40°C to 200°C	±0.5°C @ 100°C ±1.5°C @ 200°C	10 @ 100°C 20 @ 200°C	4 @ 150°C 6 @ 200°C	Int: 20 x 20 x 19 Ext: 32.5 x 27.25 x 38	4200/16.7

**Exterior dimensions include handle and exhaust port. Volts: 208/230 • Cycle: 50/60Hz • Phase: Single*

See page 19 for price information.

Model 1365

VWR Signature™ Depyrogenation Oven

Perfect for small applications

The Model 1365 Depyrogenation Oven gives you the benefits of high-priced depyrogenation ovens without the budget breaking cost.

Versatile.

Designed to operate at depyrogenation temperatures of 230°C - 250°C, this oven is perfect for small applications and cost-conscious labs. The Model 1365 is also ideal for molecular biologists working with RNA and pharmaceutical and diagnostic firms dealing with gene therapy.

High performance filtration.

The oven features a DT HT filter on the air intake side which facilitates removal of airborne gram negative bacteria. Filter scores 40-50% on the ASHRE dust spot test.

Maximum heat retention.

A plugged door provides maximum insulation and heat retention. Model 1365 also features mechanically convected horizontal air flow. Air flow is rated at 144 LFM ensuring quick, even drying of glassware.

Microprocessor controlled.

The Depyrogenation Oven is PID/Microprocessor controlled. Easy-to-read LED timer lets you set application times up to 99 hours, 59 minutes, counts down “backward” and disengages the element at the end of set time.

Complete depyrogenation.

To insure complete depyrogenation, Model 1365 should be used in conjunction with a sterilizer and proper depyrogenation procedure for rendering glassware pyrogen-free (as described in USP manual, Vol. 23).

Key features:

- Ideal for small applications
- Maximum heat retention
- PID/microprocessor controlled
- 24 month warranty on parts and labor

Cat. No.	Model	Capacity, ft.³	Style	Temperature Range	Uniformity	Dimensions*, W x D x H in.	Watts/ Amps
VWR SIGNATURE DEPYROGENATION OVEN							
13309-458	1365/220V	5.0	Small, 2 Shelves	40°C to 260°C	±2.0°C @ 250°C	Int: 25 x 21 x 18 Ext: 16 x 17.5 x 18.5	2000/9.5

**Exterior dimensions include handle and exhaust port. • Cycle: 50/60Hz • Phase: Single*

See page 19 for price information.

Unique design.

The all stainless steel housing, screws and electronic control boards in these units are treated with a protective coating to guard against such damage caused by these materials and extend the life of your oven.

Mechanical or gravity convection.

Both mechanical and gravity convection are available in this product line. The models with the "FZZ" suffix feature the true horizontal airflow for superior temperature uniformity. These units use a durable turbo blower system and non-exposed heating elements. Models with the "GZZ" suffix are gravity convection designs.

Key features:

- Microprocessor temperature controller
- Stainless steel interior and shelves
- Three-inch exhaust port
- Horizontal airflow or gravity convection
- Durable powder coat paint exterior finish
- Independent overtemperature safety
- 24 month warranty on parts and labor

VWR Signature™ Asphalt/Corrosive Material Ovens

Designed to withstand corrosion and damaging fumes

Model 1350FZZ

Manufactured specifically to resist the corrosive nature and damaging fumes of asphalt and other materials.

Cat. No.	Model	Capacity, ft.³	Style	Temperature Range	Uniformity	Heat Up, Minutes	Recovery, Minutes	Dimensions*, W x D x H in.	Watts/ Amps
VWR SIGNATURE ASPHALT/CORROSIVE OVENS									
52202-580	1330GZZ	1.6	Small, 2 Shelves	40°C to 250°C	±1.5°C @ 150°C	15 @ 150°C	6 @ 150°C	Int: 13 x 14 x 14.75 Ext: 21.25 x 23.75 x 33	1400/11.7
52202-582	1350GZZ	4.0	Medium, 2 Shelves	40°C to 250°C	±1.5°C @ 150°C	15 @ 150°C	6 @ 150°C	Int: 18.25 x 19 x 16.5 Ext: 27 x 25.5 x 34.75	1600/13.4
52202-584	1370GZZ	5.9	Large, 2 Shelves	40°C to 250°C	±1.5°C @ 150°C	15 @ 150°C	6 @ 150°C	Int: 23 x 20 x 18.5 Ext: 32.5 x 28 x 36.25	1600/13.4
52202-590	1330FZZ	1.6	Small, 2 Shelves	40°C to 250°C	±1.5°C @ 150°C	15 @ 150°C	6 @ 150°C	Int: 13 x 14 x 14.75 Ext: 21.25 x 23.75 x 33	1750/14.6
52202-592	1350FZZ	4.0	Medium, 2 Shelves	40°C to 250°C	±1.5°C @ 150°C	15 @ 150°C	6 @ 150°C	Int: 18.25 x 19 x 16.5 Ext: 27 x 25.5 x 34.75	1950/16.3
52202-594	1370FZZ	5.9	Large, 2 Shelves	40°C to 250°C	±1.5°C @ 150°C	15 @ 150°C	6 @ 150°C	Int: 23 x 20 x 18.5 Ext: 32.5 x 28 x 36.25	1950/16.3

**Exterior dimensions include handle and exhaust port. Volts: 110 • Cycle: 50/60Hz • Phase: Single*

See page 19 for price information.

True vacuum valves.

Durable vacuum valves with seats are located on the top edge of the unit for convenient pump connection. Standard high temperature silicone gaskets ensure a non-leaking seal around the door. Ovens will maintain a vacuum up to 10 microns or better.

Model 1410M

VWR Signature™ Vacuum Ovens

Designed for superior performance

VWR Signature Vacuum Ovens offer many unique features to ensure superior performance.

Top accuracy.

The microprocessor controller results in precise temperature control. Digital setpoint and display facilitate the control of the temperature in 1°C increments.

The dual door design helps maintain optimum temperature uniformity. The inner door features a half-inch thick (¾" on Model 1450M) tempered glass observation window that resists breakage under vacuum and allows you to easily view your samples. These units also feature all stainless steel interiors and exteriors for corrosion resistance and easy cleaning.

Cross flow ventilation.

The vacuum inlet is located on the top front and the bleed back inlet is in the bottom back. This configuration forces your inert gas to travel the greatest distance, passing over your samples and purging the chamber.

Unique contact heating.

These vacuum ovens utilize a unique contact heating system. The walls of the chamber are lined with heating elements. As there is no air in the chamber, heat is transferred to the samples via aluminum shelves that are in contact the walls of the chamber.

Convenient access port.

A one-inch port is located on the back of the vacuum oven chambers for easy connection of in-house pump systems and for external access with adapter. (Adapter not included).

Key features:

- True vacuum valves
- Unique cross flow ventilation
- Contact heating
- Microprocessor temperature controller
- Stainless steel interior and exterior
- Access port
- Independent overtemperature safety
- CSA approved
- 24 month warranty on parts and labor

Cat. No.	Model	Capacity, ft.³	Style	Temperature Range	Uniformity	Heat Up, Minutes	Dimensions*, W x D x H in.	Watts/ Amps
VWR SIGNATURE VACUUM OVENS								
52201-515	1410M	0.6	Small, Digital, 3 Shelves, 120V/	40–325°C	± 2.0°C @ 100°C ± 3.0°C @ 200°C	35 @ 100°C	Int. 9 x 12 x 9 Ext. 19 x 16 x 16	1410/8.3
52201-516	1410M-2		220V					1100/4.6
52201-548	1430M	1.7	Medium, Digital, 3 Shelves, 120V/	40–260°C	± 2.0°C @ 100°C ± 3.0°C @ 200°C	35 @ 100°C	Int. 12 x 20 x 12 Ext. 25 x 25 x 21	1000/8.3
52201-549	1430M-2		220V					1200/5.0
52201-650	1450M	4.5	Large, Digital, 3 Shelves, 120V/	40–260°C	± 2.5°C @ 100°C ±3.5°C @ 200°C	70 @ 100°C	Int. 18 x 24 x 18 Ext. 30 x 28.5 x 24	1500/12.5
52201-651	1450M-2		220V					1600/6.7

**Exterior dimensions include handle and exhaust stack. • Cycle: 50/60 Hz • Phase: Single*

See page 19 for price information.

VWR Signature™ Model 1495D Vacuum Oven

Designed for a variety of applications

The nine cubic foot size of this VWR Signature Model 1495D general-purpose vacuum oven makes it ideal for research and industrial use. Common applications include drying heat sensitive samples, moisture determination and drying samples under a controlled atmosphere.

Versatile programmability.

The Watlow 981 temperature controller, programmable and microprocessor-based, offers multiple ramp and soak capabilities, including storing and running up to 24 temperature profiles. Controls are easily adjustable and the control panel is user friendly. A digital vacuum gauge shows chamber vacuum level in measurements of Torr and m/Torr. The display range is 760 Torr down to 0 mil Torr. A secondary independent high limit controller provides overtemperature safety protection.

Solid construction.

The oven chamber, wrapped in high temperature insulation, aids overall performance and promotes energy efficiency. All stainless steel construction, true vacuum valves and cross-flow ventilation through the oven chamber enhance total performance. Vacuum oven is secured to a ruggedly constructed mobile stand to create a vacuum station. The stand is designed for mounting a vacuum pump at the base. Although the oven is not supplied with a vacuum pump, all vacuum plumbing and KF25 connections are provided. Stainless steel is used for all vacuum tubing and connections.

Key features:

- Large 9 cu. ft. capacity
- Microprocessor temperature controller
- Stainless steel interior and exterior
- Access port
- Independent overtemperature safety
- 24 month warranty on parts and labor

Model 1495D

Cat. No.	Model	Capacity, ft.³	Style	Temperature Range	Uniformity	Heat Up, Minutes	Dimensions*, W x D x H in.	Watts/ Amps
VWR SIGNATURE MODEL 1495D VACUUM OVEN								
15001-112	1495D	9	Large, 3 Shelves	Ambient +5°C to 220°C	±7°C @ 150°C	1.5 hours @ 150°C	Int: 71 x 61 x 161, Ext: 92 x 114 x 158	3840/16

Volts: 240 • Cycle: 50/60Hz • Phase: Single

See page 19 for price information.

Model 1410

VWRbrand™ Vacuum Ovens

Dependable performance, economically priced

Model 1400E

True vacuum valves.

Vacuum valves with seats are located on the top edge of the unit for convenient pump connection. Standard high temperature silicone gaskets ensure a non-leaking seal around the door. Ovens will maintain a vacuum up to 10 microns or better.

Durable design.

Temperature is controlled by a hydraulic thermostat and a feature stainless steel interior. A half-inch thick tempered glass observation window in the oven door permits easy viewing of the chamber interior.

Cross flow ventilation.

The vacuum inlet is located on the top front and the bleed back inlet is in the bottom back. This configuration forces your inert gas to travel the greatest distance, passing over your samples and purging the chamber.

Unique contact heating.

These vacuum ovens utilize a unique contact heating system. The walls of the chamber are lined with heating elements. As there is no air in the chamber, heat is transferred to the samples via aluminum shelves that are in contact the walls of the chamber.

Convenient access port.

The Model 1430 has a one-inch port that is located on the back of the vacuum oven chamber for easy connection of in-house pump systems and for external access with adapter. (Adapter not included).

Key features:

- True vacuum valves
- Unique cross flow ventilation
- Contact heating
- Wrap around insulation for energy efficiency
- Analog temperature controller
- Stainless steel interior
- Access port (Model 1430)
- Independent overtemperature safety
- CSA approved
- 24 month warranty on parts and labor

Cat. No.	Model	Capacity, ft.³	Style	Temperature Range	Uniformity	Heat Up, Minutes	Dimensions*, W x D x H in.	Watts/ Amps
VWRbrand VACUUM OVENS								
52201-218	1400E	0.6	Small, 2 Shelves, 120V	40-210°C	± 3.5°C @ 100°C	30 @ 100°C	Int: 9 x 12 x 9	550/4.6
52201-219	1400E-2		220V		± 5.0°C @ 200°C		Ext: 16 x 16 x 19	800/3.3
52201-504	1410	0.6	Small, 2 Shelves, 120V	40–225°C	± 3.5°C @ 100°C	30 @ 100°C	Int: 9 x 12 x 9	550/4.6
52201-505	1410-2		220V		± 5.0°C @ 200°C		Ext: 19 x 16 x 16	800/3.3
52201-559	1430	1.7	Medium, 2 Shelves, 120V	40–325°C	± 3.5°C @ 100°C	30 @ 100°C	Int: 12 x 20 x 12	1100/9.2
52201-558	1430-2		220V		± 5.0°C @ 200°C		Ext: 25 x 25 x 21	1200/5.0

**Exterior dimensions include handle and exhaust port. • Cycle: 50/60Hz • Phase: Single*

See page 19 for price information.

Model 1410MS

VWR Signature™ Safety Vacuum Ovens

Designed to meet your safety requirements

VWR Signature safety vacuum ovens incorporate safety features into the microprocessor-based vacuum oven design.

Safety design.

Designed with the safety of your lab in mind, these vacuum ovens have additional safety features such as the non-positive door latch and safety screen. This door latch design releases pressure quickly, eliminating the possibility of an explosion. The .063 gauge steel mesh safety screen over the observation window protects lab occupants in the event the glass should shatter due to an explosion.

Quality features.

These models come standard with a microprocessor temperature controller, stainless steel interior and exterior and a dual door system. They also feature the true vacuum valves, cross flow ventilation and contact heating system.

VWRbrand™ Safety Vacuum Ovens

Safety and reliability in a value-priced design

Safety design.

Designed for safe performance, these VWRbrand vacuum ovens offer features such as the non-positive door latch and safety screen. This door latch design releases pressure quickly, eliminating the possibility of an explosion. The .063 gauge steel mesh safety screen over the observation window protects lab occupants in the event the glass should shatter due to an explosion.

Standard features.

The digital designs come standard with a stainless steel interior and exterior and a dual door system. They also feature the true vacuum valves, cross flow ventilation and contact heating system as well.

Cat. No.	Model	Capacity, ft.³	Style	Temperature Range	Uniformity	Heat Up, Minutes	Dimensions*, W x D x H in.	Watts/ Amps
VWR SIGNATURE SAFETY VACUUM OVENS								
52201-481	1410MS	0.6	Small, 2 Shelves	40–325°C	± 2.0°C @ 100°C ± 3.0°C @ 200°C	35 @ 100°C	Int: 9 x 12 x 9 Ext: 19 x 16 x 16	1410/8.3
52201-551	1430MS	1.7	Medium, 2 Shelves	40–260°C	± 2.0°C @ 100°C ± 3.0°C @ 200°C	35 @ 100°C	Int: 12 x 20 x 12 Ext: 25 x 25 x 21	1000/8.3
52201-656	1450MS	4.5	Large, 2 Shelves	40–260°C	± 2.5°C @ 100°C ± 3.5°C @ 200°C	70 @ 100°C	Int: 18 x 24 x 18 Ext: 30 x 28.5 x 24	1500/12.5
VWRbrand SAFETY VACUUM OVENS								
52201-490	1410S	0.6	Small, 2 Shelves	40–225°C	± 3.5°C @ 100°C ± 5.0°C @ 200°C	30 @ 100°C	Int: 9 x 12 x 9 Ext: 19 x 16 x 16	550/4.6
52201-479	1430S	1.7	Medium, 2 Shelves	40–325°C	± 3.5°C @ 100°C ± 5.0°C @ 200°C	30 @ 100°C	Int: 12 x 20 x 12 Ext: 25 x 25 x 21	1100/9.2

**Exterior dimensions include handle and exhaust stack. • Volts: 120 • Cycle: 50/60 Hz • Phase: Single*

See page 19 for price information.

VWR®

vwr.com
1.800.932.5000

Unstirred Baths *Circulating Baths* *Immersion Circulators* *Recirculating Chillers*

Everything You Need for the Perfect Water Bath System

You May Also Need...

VWR® Water Bath Thermometers, 13" Long Pg. 4
Cat. No.: 61069-963 *Ea. / $51.42*

VWR® Water Bath Balls, 20mm Dia. Pg. 4
Cat. No.: 26396-466 *Pk. 500 / $81.84*

VWR® Clear Bath Algicide, 8oz. Bottle Pg. 4
Cat. No.: 13272-031 *Ea. / $40.75*

VWR® Narrow Mouth Erlenmeyer Flasks, 4L Pgs. 2, 7
Cat. No.: 89000-372 *Cs. 4/ $212.09*

VWR® Flask Weights for 250–1000mL Flasks Pg. 2
Cat. No.: 29700-026 *Ea./ $19.70*

VWR® Griffin Low-Form Beakers, 250mL Pg. 7
Cat. No.: 89000-204 *Pk. 12/ $47.75*

VWR® Disposable Culture Tubes, 18 O.D. x 150L mm Pgs. 3, 7
Cat. No.: 47729-583 *Cs. 500/ $79.27*

Services

VWR® Temperature Calibration Services Pg. 8
Call 1.888.793.2300 or visit vwr.com

Ideal for a wide variety of routine laboratory applications, these baths feature a robust design for years of trouble-free service.

VWR® Unstirred Baths

You May Also Need...

VWR® Narrow Mouth Erlenmeyer Flasks

- *Narrow Mouth*
- *Reinforced Beaded Top*
- *Capacity Scale*

Description	Cat. No.	Price
500mL	**89000-366**	Cs. 36/ **158.54**
1L	**89000-368**	Cs. 24/ **171.81**
4L	**89000-372**	Cs. 4/ **212.09**

VWR® Lead Ring Flask Weights

- *Vinyl Covered*

Description	Cat. No.	Price
Fits 125–500mL Flasks	**29700-004**	Ea./ **17.66**
Fits 250–1000mL Flasks	**29700-026**	Ea./ **19.70**
Fits 500–2000mL Flasks	**29700-048**	Ea./ **23.63**

VWR® Beaker Tongs

- *For 50–2000mL Vessels*
- *Made of Carbon Steel*
- *Plastic Coated Tips*

Description	Cat. No.	Price
18.4cm (7 1/4") Long	**82027-360**	Ea./ **10.25**

VWR® Base Trays

- *Enable Placement of Flat-Bottom Flasks Directly on Base of Bath*

Description	Cat. No.	Price
For 2.1L Baths	**89032-244**	Ea./ **68.15**
For 2L and 4.9L Baths	**89032-246**	Ea./ **71.05**
For 11.8L Baths	**89032-248**	Ea./ **72.50**
For 18.4L Baths	**89032-250**	Ea./ **75.40**

High-grade stainless steel tank in a robust outer case - tough and durable in demanding environments; easy to clean
Heater mat and temperature sensor mounted underneath the tank - optimizes temperature uniformity and workspace; easy to keep clean
Digital control system - provides reproducibility of set temperature and accurate repetition of sensitive procedures
Easily visible 3-digit LED display - at-a-glance reassurance
VWR
215
System protection through independent overtemperature cut-out - protects users and workplace in case the bath is accidently allowed to operate with insufficient or no liquid
Sample protection through user-adjustable secondary control system - protects samples in the event of primary control system failure
Membrane keypad with interactive display - simple user interface for accurate set-up
Control panel located for easy access - allows end-on positioning of bath to maximize bench space

Capacity		Dimensions	Description	Cat. No.	Price	Raised Shelves	Cat. No.	Price	Base Trays	Cat. No.	Price
2.1 L (0.6 gal.)		13.7L x 15.1W x 15D cm (5 13/32 x 5 15/16 x 5 29/32")	Digital	89032-210	Ea./ 688.68		—			89032-244	Ea./ 68.15
			Analog	89032-196	Ea./ 627.17						
2.0 L (0.4 gal.)		15.1L x 30W x 6.5D cm (5 15/16 x 11 13/16 x 2 9/16")	Digital	89032-212	Ea./ 688.68		—			89032-246	Ea./ 71.05
			Analog	89032-198	Ea./ 625.30						
4.9 L (1.3 gal.)		15.1L x 30W x 15D cm (5 15/16 x 11 13/16 x 5 29/32")	Digital	89032-214	Ea./ 773.12		—			89032-246	Ea./ 71.05
			Analog	89032-200	Ea./ 686.80						
11.8 L (3.1 gal.)		32.7L x 30W x 15D cm (12 7/8 x 11 13/16 x 5 29/32")	Digital	89032-216	Ea./ 905.31		89032-252	Ea./ 111.65		89032-248	Ea./ 72.50
			Analog	89032-202	Ea./ 771.03						
18.4 L (4.9 gal.)		50.5L x 30W x 15D cm (19 29/32 x 11 13/16 x 5 29/32")	Digital	89032-218	Ea./ 1143.21		89032-254	Ea./ 163.85		89032-250	Ea./ 75.40
			Analog	89032-204	Ea./ 865.07						
26 L (6.9 gal.)		50.5L x 30W x 20D cm (19 29/32 x 11 13/16 x 7 7/8")	Digital	89032-220	Ea./ 1442.40		89032-254	Ea./ 163.85		89032-250	Ea./ 75.40
			Analog	89032-206	Ea./ 1024.37						
4.9/11.8 L (1.3/3.1 gal.)		15.1/32.7L x 30W x 15D cm (5 15/16 x 12 7/8 x 11 13/16 x 5 29/32")	Digital	89032-222	Ea./ 1601.70		89032-252	Ea./ 111.65		89032-246	Ea./ 71.05
			Analog	89032-208	Ea./ 1509.54					89032-248	Ea./ 72.50

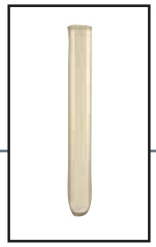
Baths include polycarbonate gabled lids. Stainless steel lids are also available; contact your VWR representative for more information.

You May Also Need...

VWR® Disposable Culture Tubes

- *Durex® Borosilicate Glass*
- *Uniform Dimensions*
- *Exceed USP Type I Specifications*

Description	Cat. No.	Price
13 O.D. x 100L mm	**47729-572**	Cs. 1000/ **77.50**
16 O.D. x 100L mm	**47729-576**	Cs. 1000/ **106.10**
18 O.D. x 150L mm	**47729-583**	Cs. 500/ **79.27**



VWR® Raised Shelves

- *Provide Alternate Depths to Accommodate Different Sizes/Shapes of Vessels Simultaneously*
- *Stainless Steel*

Description	Cat. No.	Price
For 11.8L Baths	**89032-252**	Ea./ **111.65**
For 18.4L and 26L Baths	**89032-254**	Ea./ **163.85**

VWR® Tube Racks

- *Stainless Steel*

Tube Racks	Cat. No.	Price
Microtube Rack, Holds 115 Microtubes, 0.5mL	**89032-240**	Ea./ **97.15**
Microtube Rack, Holds 84 Microtubes, 1.5mL	**89032-242**	Ea./ **97.15**
Test Tube Rack, Holds 84 Tubes, 10mm	**89032-228**	Ea./ **97.15**
Test Tube Rack, Holds 55 Tubes, 13mm	**89032-230**	Ea./ **97.15**
Test Tube Rack, Holds 36 Tubes, 16mm	**89032-232**	Ea./ **97.15**
Test Tube Rack, Holds 32 Tubes, 19mm	**89032-234**	Ea./ **97.15**
Test Tube Rack, Holds 18 Tubes, 25mm	**89032-236**	Ea./ **97.15**
Test Tube Rack, Holds 12 Tubes, 30mm	**89032-238**	Ea./ **97.15**

Precise and stable temperature control for general laboratory cooling and heating applications.

VWR® Circulating Baths

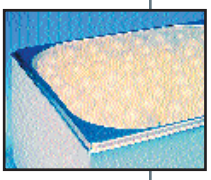
You May Also Need...

VWR® Water Bath Thermometers Individually Serialized

- *±1° Accuracy*

Description	Cat. No.	Price
Mercury-Filled, 0–50°C, 305mm (12") Long	**61222-542**	Ea./ **29.75**
Mercury-Filled, 0–70°C, 330mm (13") Long	**61069-963**	Ea./ **51.42**
Red Spirit-Filled, 25–37–56°C, 240mm (9 1/4") Long	**61018-128**	Ea./ **40.89**

VWR® Water Bath Balls



- *Made of Durable Polypropylene*
- *Provide Surface Insulation for Water Baths*
- *Use Between Approx. 5°C to 100°C (41° to 212°F)*

Description	Cat. No.	Price
20mm Dia.	**26396-466**	Pk. 500/ **81.84**
38mm Dia.	**26396-472**	Pk. 100/ **52.68**

VWR® Clear Bath Algicide

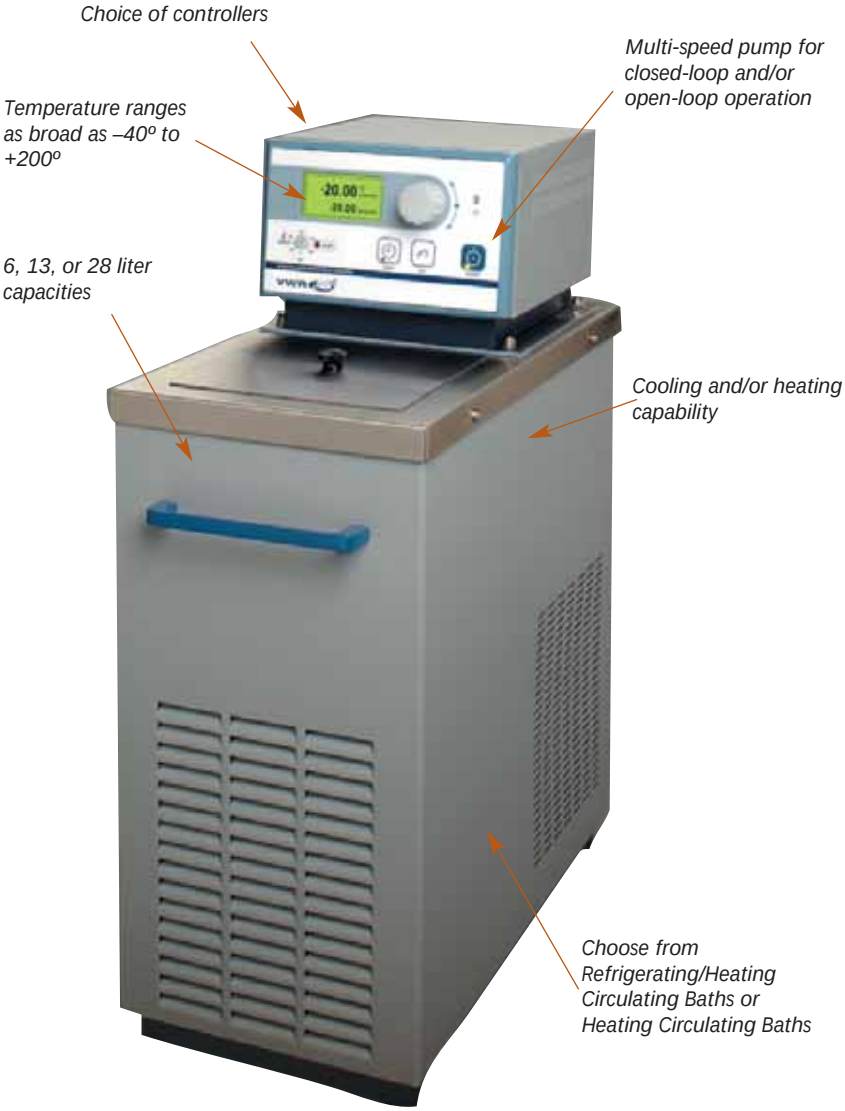
- *Effective Against Resistant Algae*
- *Compatible with Stainless Steel*
- *One 8oz. Bottle Treats Approx. 200gal.*

Description	Cat. No.	Price
237mL (8oz.) Bottle	**13272-031**	Ea./ **40.75**

Uvex Strategy® Goggles, Bacou-Dalloz

- *Clear, Uvextra™ AF Lens Coating*
- *99.9% UV protection*
- *Fit Comfortably Over Most Prescription Eyewear*

Description	Cat. No.	Price
Direct Vent, Fabric Headband	**89013-224**	Ea./ **8.84**
Closed Vent, Neoprene Headband	**89013-226**	Ea./ **8.84**
Indirect Vent, Neoprene Headband	**89013-228**	Ea./ **9.67**
Indirect Vent, Foam Lining, Fabric Headband	**89013-230**	Ea./ **10.62**


Choice of controllers
Multi-speed pump for closed-loop and/or open-loop operation
Temperature ranges as broad as –40º to +200º
6, 13, or 28 liter capacities
Cooling and/or heating capability
Choose from Refrigerating/Heating Circulating Baths or Heating Circulating Baths

VWR® Thermometry Calibration Reservoir

- *4.8L (1.3gal.) Companion Reservoir for Model 1157P*
- *Programmable controller*
- *Includes Lid with Thermometer Holders*

Description	Cat. No.	Price
Calibration Reservoir	**97000-042**	Ea./ **1,512.00**

Double-Dipped PVC Gloves, Wells Lamont

- *PVC/Nitrile Blend Finish Provides Excellent Chemical Resistance*
- *Jersey Lining Provides Moderate Insulation and Extra Cushioning*
- *Forest Green with a 12" Gauntlet Cuff*

Size	Cat. No.	Price
Large	**80091-768**	Pk. 12 Pr./ **55.04**

Refrigerating / Heating Circulating Water Baths

Heating Circulating Water Baths

Capacity	6 Liters		13 Liters		28 Liters	6 Liters	13 Liters	28 Liters
Maximum Temperature	200°C				150°C	200°C	150°C	
Minimum Temperature	–20°C		–30°C	–40°C	–25°C	Ambient +5°C		
Cooling Capacity @ 20°C	200W		660W	680W	700W	—	—	—
Model (by controller type)								
Programmable	Model 1167P	Model 1147P	Model 1157P	Model 1197P	Model 1187P	Model 1137P	Model 1137-1P	Model 1137-2P
Cat. No. 120V	**13271-082**	**13271-094**	**13271-106**	**13271-118**	**13271-130**	**13271-156**	**13271-168**	**13271-180**
Price	Ea./ **3,998.49**	Ea./ **3,866.33**	Ea./ **4,309.10**	Ea./ **4,919.61**	Ea./ **4,502.35**	Ea./ **3,009.03**	Ea./ **3,182.35**	Ea./ **3,379.05**
Digital	Model 1166D	Model 1146D	Model 1156D	Model 1196D	Model 1186D	Model 1136D	Model 1136-1D	Model 1136-2D
Cat. No. 120V	**13271-078**	**13271-090**	**13271-102**	**13271-114**	**13271-126**	**13271-152**	**13271-164**	**13271-176**
Price	Ea./ **3,138.00**	Ea./ **3,034.30**	Ea./ **3,449.02**	Ea./ **4,059.55**	Ea./ **3,670.87**	Ea./ **2,414.58**	Ea./ **2,509.17**	Ea./ **2,706.40**
Standard	Model 1160S	Model 1140S	Model 1150S	Model 1190S	Model 1180S	Model 1130S	Model 1130-1S	Model 1130-2S
Cat. No. 120V	**13271-074**	**13271-086**	**13271-098**	**13271-110**	**13271-122**	**13271-148**	**13271-160**	**13271-172**
Price	Ea./ **2,468.03**	Ea./ **2,468.04**	Ea./ **2,889.16**	Ea./ **3,381.14**	Ea./ **3,108.83**	Ea./ **1,703.45**	Ea./ **1,846.52**	Ea./ **1,978.62**
Analog	Model 1162A	—	—	—	—	—	—	—
Cat. No. 120V	**13271-070**	**—**	**—**	**—**	**—**	**—**	**—**	**—**
Price	Ea./ **2,258.52**	—	—	—	—	—	—	—
Working Access Dimensions	13.3L x 13.3W x 14H cm (5 1/4 x 5 1/4 x 5 1/2")		14L x 28W x 15.2H cm (6 x 11 x 5 1/2")		26L x 26W x 26H cm (10 1/4 x 10 1/4 x 10 1/4")	13.3L x 13.3W x 14H cm (5 1/4 x 5 1/4 x 5 1/2")	13.3L x 21.6W x 37.5H cm (5 1/4 x 8 1/4 x 7 3/4")	30.8L x 26.4W x 20.3H cm (12 1/8 x 10 3/8 x 8")
Unique Characteristics	Space Saving	Low Profile	Very Low Temperature	Very Low Temperature	Large Access Reservoir	Compact Design	Mid-Size Reservoir	Large Access Reservoir

Choose the Controller That Fits Your Application:

Operation

Performance

Safety

	Time & Temperature Programming	Remote Temperature Control	RS-232	Datalogging Capability	Datalogging Software (LabView, Excel, and Palm OS)	Full Graphic Display	Multi-Language Menus	Temperature Trend Displays	Simultaneous Actual & Set Point Temperature Display	Temperature Readout	Readout in °C and °F	Readout Accuracy	Timer	Temperature Stability	Maximum Temperature	PID Control	User-Defined Temperature Presets	Pump	Pump Pressure (maximum at 0 LPM flow rate)	Pressure Flow Rate (maximum)	Suction Flow Rate (maximum)	Open Loop Operation	Closed Loop Operation	AutoTune (adjusts performance to liquid properties and mass)	High-Temperature Limits (user-preset)	Low-Temperature Limits (user-preset)	Low Liquid Level Safety	Over-Temperature Safety (user-preset)	Temperature Calibration	Local Controller Lockout	Audible Alarm	Visual Alarm—Warnings, Faults, and Errors
Programmable	■	■	■	■	■	■	■	■	■	Graphic LCD	■	±0.25°C	■	±0.01°C	200°C	■		Variable Speed	5.0 PSI	30 LPM	22 LPM	■	■	■	■	■	■	■	■	■	■	■
Digital			■	■		■	■	■	■	Graphic LCD	■	±0.25°C	■	±0.01°C	200°C	■		Variable Speed	5.0 PSI	30 LPM	22 LPM	■	■	■	■	■	■	■	■	■	■	■
Standard										LED	■	±0.5°C		±0.05°C	150°C	■	■	2-Speed	2.6 PSI	15 LPM	N/A		■		■		■	■	■	■		■
Analog										Thermometer		N/A		±0.2°C	100°C			2-Speed	2.6 PSI	15 LPM	N/A		■				■	■				

The VWR® family of immersion circulators makes it easy to create your own unique bath for above ambient temperature control.

VWR® Immersion Circulators

Controller Type	Model (120V)	Minimum Temperature**	Maximum Temperature*†	Cat. No.	Price
Programmable	Model 1127P	200°C	Ambient +5°C	**13271-142**	Ea./ **2016.41**
Standard	Model 1122S	150°C	Ambient +5°C	**13271-138**	Ea./ **981.64**
Analog	Model 1112A	100°C	Ambient +5°C	**13271-134**	Ea./ **780.09**

*Maximum temperature is controller dependent.
†Immersion circulator's maximum temperature is dependent on fluid volume.
**Minimum temperature is shown with no external heat load.

You May Also Need...

VWR® Absorbent Bench Underpads

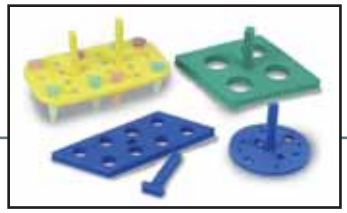
- *Soft White Top Sheet*
- *Absorbent Cellulose Fluff Filler*
- *Blue Backing Sheet*

Description	Cat. No.	Price
550mL Absorbency	**56616-020**	Cs. 150/ **101.94**
600mL Absorbency	**56617-024**	Cs. 150/ **93.62**
1350mL Absorbency	**56617-032**	Cs. 60/ **98.53**

VWR® Floating Foam Tube Racks

- *Ideal for use in Water Baths, Tubs, or Beakers*
- *Washable, Reusable Closed Cell HDPE Foam*

Description	For Tube Size	Color	Shape	Cat. No.	Price
4 Place	50mL	Green	Diamond	**82017-628**	Pk. 5/ **17.60**
8 Place	15mL	Blue	Parallelogram	**82017-630**	Pk. 5/ **16.16**
18 Place	0.2, 0.5, and 1.5–2.0mL	Blue	Round	**82017-634**	Pk. 5/ **18.38**
24 Place	1.5–2.0mL	Yellow	Rectangle	**82017-632**	Pk. 5/ **18.19**
50 Place	10x75, 12x75, and 13x100mm	Charcoal	Rectangle	**82024-512**	Pk. 6/ **36.48**



Significant levels of heat removal for high-pressure closed loop operation.

VWR® Recirculating Chillers

1/4 to 1 HP compressor
Continuously displays temperature and pressure / flow rate
High-efficiency cooling system
–10° to 40° C temperature range, ±0.1° C stability

Model	HP	Voltage	Cooling Capacity Watts (BTU/hour) 0°C	10°C	20°C	Pump Type	Pressure PSI (KpA)	Flow LPM	Cat. No.	Price
1171MD	1/4	120V	200 (682)	500 (1705)	800 (2728)	Centrifugal	10 (68.9)	15.5	**13271-184**	Ea./ **2551.34**
1171PD	1/4	120V	200 (682)	500 (1705)	800 (2728)	Positive Displacement	20–100 (137.9–680.9)	3.8	**13271-188**	Ea./ **2639.83**
1173MD	1/3	120V	500 (1705)	900 (3069)	1200 (4092)	Centrifugal	10 (68.9)	15.5	**13271-192**	Ea./ **2808.15**
1173PD	1/3	120V	500 (1705)	900 (3069)	1200 (4092)	Positive Displacement	20–100 (137.9–680.9)	3.8	**13271-196**	Ea./ **2796.09**
1175MD	1/2	120V	750 (2557)	1100 (3751)	1700 (5797)	Centrifugal	10 (68.9)	15.5	**13271-200**	Ea./ **3218.21**
1175PD	1/2	120V	750 (2557)	1100 (3751)	1700 (5797)	Positive Displacement	20–100 (137.9–680.9)	3.8	**13271-204**	Ea./ **3078.52**
1177MD	3/4	208/230V	760 (2591)	1700 (5797)	2500 (8525)	Centrifugal	10 (68.9)	15.5	**13271-208**	Ea./ **3433.26**
1177PD	3/4	208/230V	760 (2591)	1700 (5797)	2500 (8525)	Positive Displacement	20–100 (137.9–680.9)	13.2	**13271-212**	Ea./ **3395.86**
1179MD	1	208/230V	1000 (3410)	1950 (6659)	2900 (9889)	Centrifugal	10 (68.9)	15.5	**13271-216**	Ea./ **3899.52**
1179PD	1	208/230V	1000 (3410)	1950 (6659)	2900 (9889)	Positive Displacement	20–100 (137.9–680.9)	13.2	**13271-220**	Ea./ **4033.52**

VWR® Class A Volumetric Flasks

- *Include ⅋ Glass Stoppers*
- *Calibrated "To Contain"*
- *Meet ASTM Specification E288, Class A Unserialized Requirements*

Description	Cat. No.	Price
250mL	**89000-408**	Pk. 6/ **282.69**
500mL	**89000-410**	Pk. 6/ **350.64**
1L	**89000-412**	Cs. 6/ **306.71**

VWR® Narrow Mouth Erlenmeyer Flasks

- *Reinforced Beaded Top*
- *Capacity Scale*
- *Meet ASTM Specification E1404, Type 1, Class 1 Requirements*

Description	Cat. No.	Price
250mL	**89000-362**	Pk. 12/ **58.04**
2L	**89000-370**	Pk. 4/ **95.12**
6L	**89000-374**	Cs. 4/ **390.03**

VWR® Disposable Culture Tubes

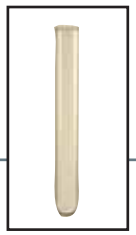
- *Durex® Borosilicate Glass*
- *Uniform Dimensions*
- *Exceed USP Type I Specifications*

Description	Cat. No.	Price
160.D. x 125L mm	**47729-578**	Cs. 1000/ **121.19**
160.D. x 150L mm	**47729-580**	Cs. 1000/ **127.95**
250.D. x 150L mm	**47729-586**	Cs. 500/ **171.67**

VWR® Griffin Low-Form Beakers

- *Type I, Class A Borosilicate Glass*
- *Double-Capacity Scale*
- *Thick, Beaded Top with Spout*

Description	Cat. No.	Price
250mL	**89000-204**	Pk. 12/ **47.75**
600mL	**89000-208**	Pk. 6/ **35.78**
1L	**89000-212**	Pk. 6/ **67.21**



VWR® Temperature Calibration Services

VWR calibration services provide complete, comprehensive temperature calibration designed to provide the lowest possible measurement uncertainties for infrared thermometers, thermistors, thermocouples, liquid-in-glass thermometers, bi-metal thermometers, and RTDs. Services are performed using direct comparison (–100 to 600°C), simulation (–250 to 2300°C), or the infrared (35 to 600°C) method, which utilizes a NIST traceable blackbody.

Data sets can include "as found" data, "as left" data, or both depending on the service selected. The service utilizes a three-point measurement structure where feasible. The additional calibration service allows for specification of custom calibration points or parameters outside the standard three-point structure, and is available for all instruments.

Each instrument is individually calibrated and certified against equipment whose calibration is traceable to the National Institute of Standards and Technology (NIST).

Contact your VWR Calibration & Metrology Service Specialist, or call us today at 888-793-2300 to discuss your service needs.

Description	Cat. No.	Price
Infrared Thermometer/Thermistor Calibration Service	**VAS-TMCAL-20**	Ea./ **105.00**
Thermocouple Thermometer Calibration Service	**VAS-TMCAL-01**	Ea./ **105.00**
Thermocouple Probe Calibration Service	**VAS-TMCAL-02**	Ea./ **73.50**
Liquid-in-Glass Thermometer Calibration Service	**VAS-TMPCL-01**	Ea./ **85.00**
Bi-Metal Thermometer Calibration Service	**VAS-TMCAL-21**	Ea./ **79.00**
RTD Thermometer Calibration Service	**VAS-TMCAL-22**	Ea./ **115.50**
RTD Probe Calibration Service	**VAS-TMCAL-23**	Ea./ **199.50**
Additional Points Calibration Service	**VAS-TMCAL-PT**	Ea./ **31.50**

VWR®

1.800.932.5000 vwr.com

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VWR INTERNATIONAL™

VWR Circulators and Chillers

Superior Temperature Control Equipment

Clockwise from top left: 13721-200, 13721-172, 13721-138, 13721-082

VWR INTERNATIONAL™

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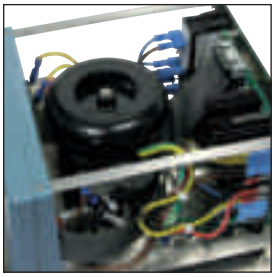
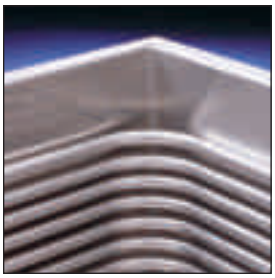
ISO 9001 Certified

All instruments are manufactured in an ISO 9001 accredited facility.



Precise Controllers

Choice of four controllers. From state-of-the-art programmable designs that provide ultimate control, to the analog design that is perfect for less demanding applications.



Durable Design

Immersed parts and reservoirs are made of corrosion-fighting stainless steel. The exterior surface is a tough powder coating for easy clean-up.

Double Safety

Your equipment and work are protected with redundant over temperature and low liquid cutoff standard on all circulators. 60Hz models are CSA approved, 50Hz models carry the CE mark.

Environmentally Responsible

VWR Refrigerated Circulators and Chillers use R-134a refrigerant, and no ozone-depleting CFC's are used in the manufacturing process.

Modifications and Custom Configurations

VWR International has the capability to create customized temperature control solutions for your applications with unique requirements. Your VWR Sales and Customer Service Representatives are available to review and discuss your application needs.

Tell us your needs for fluid temperature, heat load, flow, fluid compatibility, pressure, electrical configuration, quantity of units needed and other requirements.

Our experienced engineers and production teams will design, quote and build units to the exact specifications your appliaction requires.

Time Savers

Advanced refrigeration systems and high wattage heaters respond quickly to temperature changes. You'll have minimum waiting time for your circulator to stabilize.

Versatile Pumps

VWR Signature® models offer powerful duplex pumps with five selectable flow rates. All other circulators offer simplex pressure pump with two pump speeds.

Easy Hook Up

Reservoir models have 1/4 in. NPT internally threaded inlet and outlet for easy attachment to external equipment. Adapters for 3/8, 1/4 and 3/16 inch tubing are supplied.

2-Year Warranty

Satisfaction guaranteed with a VWR 2-year warranty on parts and service. VWR® Circulators are made in the USA. You get quick access to service and parts.

A full range of controllers to meet the most demanding applications.

VWR® Circulators, Chillers and Temperature Control Systems are a tremendous value in today's market. Superior performance and enhanced features give the user the ultimate flexibility and versatility in providing temperature control solutions.

Circulators offer a choice of four controllers, from the advanced VWR Signature® Models with programmability for critical control requirements to the cost-effective analog styles for less demanding applications. See which features suit your application needs best.

VWR Signature Programmable Controller

VWR Signature Circulators with Programmable Controller offer the greatest number of features with the simplicity of a one-touch, multi-function, Select/Set knob. Just dial in your application parameters and your operation is ready to go.

LCD readout simultaneously displays your setpoint and actual fluid temperature. Multi-language, full graphics display utilizes help menus for assistance in set up. The built-in timer provides visual and audible indicators for timed applications. The display will also let you know it's time for a calibration interval or even service attention.

Time/temperature programs can be set up directly from the front panel with the use of the controller's Select/Set knob. Ten programs can be stored in the controller's memory, each having 50 steps that can be cycled up to 999 times.

An RS-232 interface is standard. Data logging can be viewed from the graphics display or done via your PC. Included software supports National Instruments™ LabVIEW™, Microsoft® Excel* (data logging XLS and control XLA) and Palm OS®.

Remote probe capability is one of the strongest reasons for choosing this programmable controller. The optional probe can take over temperature control at the point of application, such as in a remote bath. Thermal loss in tubing lines is eliminated and accuracy is maintained.

Programmable models have a 5-speed adjustable pressure/suction (duplex) pump. Use the higher speeds for viscous fluids or external circulation, or choose the lower speeds for less turbulence, less heat generation, and quieter operation.

User adjustable high and low temperature limits and alarms are stored in non-volatile memory. A redundant safety thermostat protects over temperature and low liquid situations. On-demand automatic refrigeration control is standard on all refrigerated programmable units.

*Requires Microsoft Office 97, 2000, or 2002, running Windows 98, 2000, or XP

- Time/Temperature programming
- Multi-Language, Full Graphics LCD Display
- Remote Probe Capability
- RS-232 Interface with Software Included
- Adjustable Five Speed Pressure/Suction Pump

VWR Signature® Digital Controller

The Digital Controller provides outstanding performance for demanding applications where programmability and remote probe are not required.

Operation is set up with unparalleled ease thanks to a single one-touch, multi-function Select/Set knob. The Select/Set knob provides convenient menu selection while the full graphics LCD displays both set and actual fluid temperatures simultaneously. Readout stability is ±0.01°C with temperature up to 200°C.

The powerful microprocessor controller can be tuned to optimize PID performance for various fluids and volumes. User-settable high and low safety limits, a redundant over-temperature and low-liquid level cutoff are standard.

Equipped with the 5-speed pressure/suction (duplex) pump, the Digital Controller can be used for open or closed loop applications. This model is an ideal choice, especially for budget-conscious applications.

- Accurate Microprocessor Control
- Multi-Language Full Graphics LCD Display
- Adjustable Five Speed Pressure/Suction Pump
- RS-232 Interface Included

VWR® Standard Controller

Operation is simple. One Push/Turn Encoder knob controls operational set up. Three user-defined temperature preset buttons allow for rapid setpoint change for your most frequently used applications. The bright LED monitors fluid temperature continuously, and with a quick touch of the encoder knob, the set temperature is displayed. Choose readout in either °C or °F.

All Standard Controllers have 2-speed pressure (simplex) pumps suitable for closed loop applications. Low pump speed is quiet and provides longer motor life while high speed is preferable for more demanding pumping requirements.

Digital set, readout to 0.1°C, and microprocessor control at a price near analog technology are distinguishing features of the Standard Controller. It's stability of ±0.05°C plus temperatures up to 150°C are excellent for many applications.

A redundant safety backup for over temperature and low liquid situations protects your work and equipment.

- Microprocessor Control With Easy-to-Read bright LED Display
- Three User-Defined Temperature Preset Buttons
- Cost Effective For Routine Use

VWR Analog Controller

The Analog Controller is available on selected models. It provides economical and accurate control with ±0.2°C stability and temperatures up to 100°C, ideal for general and routine laboratory applications.

Zero switching controller design eliminates annoying radio frequency electrical interference, which can disrupt nearby laboratory equipment.

The 2-speed pressure (simplex) pump produces a flow of 9 or 15 liters per minute. Temperature readout is via thermometer, which is supplied.

A clear, skirted dial reduces parallax and aids in setting accuracy.

- Most Economical Model
- Proportional Temperature Control
- Zero Switching Eliminates RFI
- Redundant Safety Backup

VWR Signature Refrigerated/Heating Circulating Baths, 6 Liter, Low Profile

- For Use on Mobile Cart
- Convenient for Shelf Placement
- Easy Access Sample Immersion
- Work Space on Bath Top

The 1147P and 1146D offer excellent temperature range, cooling capacity and a 5-speed adjustable pressure & suction (duplex) pump along with a full graphics LCD display.

The low profile design fits many space requirements nicely. Placement on a shelf above the work area frees up bench space while allowing eye-level access to the controls. On the benchtop, the lower profile permits easier access to the reservoir. Space on the stainless steel top can be used for additional work area. The wider footprint adds stability for calibration work or applications where mobility on a cart is necessary.

Programmable Model 1147P. This model features time/temperature programmability. Data logging via the RS-232 interface and appropriate software are also possible. LabVIEW™ drivers and Excel macros offer even greater programming and data logging convenience. Remote temperature probe capability is provided.

Digital Model 1146D. The digital controller offers excellent temperature range and stability and is your best choice when remote probe, time/temperature programming and communication software are not required. Perfect for applications on a budget.

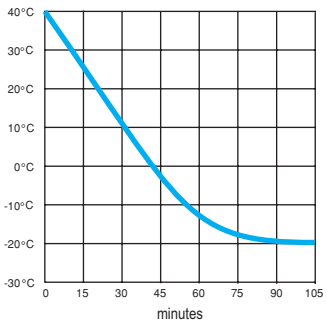
Controllers described on pages 4-5. Accessories listed on page 26.

Ideal For: *Calibration • Chromatography Columns • Densitometers • Distillation Condensers Electrophoresis Apparatus • Polarimeters • General Laboratory Cooling • Isoelectric Focusing Refractometers • Rotary Evaporators • Spectrophotometers • Viscometers*

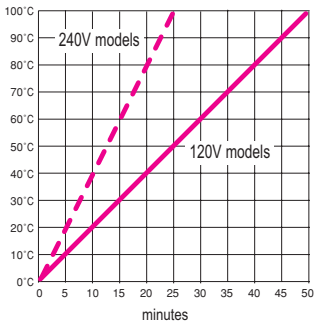
Specifications	Model 1147P	Model 1146D
Temperature Range / Stability	-20° to 200°C / ±0.01°C	
Controller / RS-232	Programmable / Yes	Digital / Yes
Readout / Accuracy	Graphics LCD, °C or °F / ±0.25°C	
Reservoir Capacity	6 liters	
Cooling Capacity	200 Watts @ +20°C, 140 Watts @ 0°C, 100 Watts @ -10°C	
Heater	1100 Watt (120V models), 2200 Watt (240V models)	
Pressure Flow Rate	5-speed (Duplex Pump), 11 to 24 liters/min.	
Suction Flow Rate	5-speed, 8 to 18 liters/min.	
Safety Cutoffs	Adjustable Over-Temperature & Low-Liquid Cutoff	
Working Access, L x W x D	5-1/4 x 5-1/4 x 5-1/2 in. / 13.3 x 13.3 x 14 cm	
Overall Dimensions, L x W x H	15-3/4 x 18-3/4 x 17 in. / 40 x 47.6 x 43.2 cm	
Pump Inlet & Outlet	1/4 in. FPT Rear Discharge	
Shipping Weight	76 lbs. / 34.5 kg	67 lbs. / 30.4 kg
Cat. No. (120V, 60Hz, 10Amps)	**13271-094** $3415	**13271-090** $2675
Cat. No. (240V, 50Hz, 5Amps)	**13271-096** $3440	**13271-092** $2700

Note: Cooling capacity, Watts x 3.41 = BTUs/hr. Performance specifications determined at ambient temperature of 20°C/68°F. For 50Hz units, derate cooling capacity by 17%.

Cooling



Heating



VWR Signature Refrigerated/Heating Circulating Baths, 6 Liter, Space Saving

- Most Popular Design
- Saves Valuable Bench Space
- Quiet Operation

This series features a 6 liter reservoir in a space saving vertical design. Only 8-1/4 inches (21cm) wide, the small foot print conserves precious bench space.

Size configuration and a wide range of performance make this series the most popular circulator style. Dependable, precise and compact, all models feature redundant over temperature and low liquid level protection.

The refrigeration system is designed to be used below 60°C. This allows rapid bath cooling from 60°C or lower, plus maximizes temperature control and reduces energy consumption above 60°C. The hermetically sealed compressor is designed for years of maintenance-free use.

Programmable Model 1167P. This top-of-the-line model features time/temperature programmability. Programs can be set directly from the front panel or from a PC using the RS-232 interface. LabVIEW™ drivers and Excel macros offer even greater programming and data logging convenience. Remote probe capability further enhances the 1167P capabilities.

Digital Model 1166D. The digital controller offers great performance and is your ideal choice when remote probe, time/temperature programming and communication software are not required. Perfect for applications on a budget.

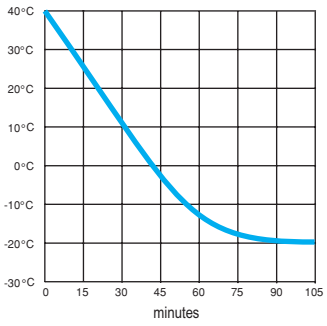
Controllers described on pages 4-5. Accessories listed on page 26.

Ideal For: *Calibration • Chromatography Columns • Densitometers • Distillation Condensers Electrophoresis Apparatus • Polarimeters • General Laboratory Cooling • Isoelectric Focusing Refractometers • Rotary Evaporators • Spectrophotometers • Viscometers*

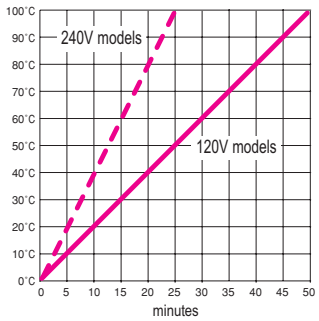
Specifications	Model 1167P	Model 1166D
Temperature Range / Stability	-20° to 200°C / ±0.01°C	
Controller / RS-232	Programmable / Yes	Digital / Yes
Readout / Accuracy	Graphics LCD, °C or °F / ±0.25°C	
Reservoir Capacity	6 liters	
Cooling Capacity	200 Watts @ +20°C, 140 Watts @ 0°C, 100 Watts @ -10°C	
Heater	1100 Watt (120V models), 2200 Watt (240V models)	
Pressure Flow Rate	5-speed (Duplex Pump), 11 to 24 liters/min.	
Suction Flow Rate	5-speed, 8 to 18 liters/min.	
Safety Cutoffs	Adjustable Over-Temperature & Low-Liquid Cutoff	
Working Access, L x W x D	5-1/4 x 5-1/4 x 5-1/2 in. / 13.3 x 13.3 x 14 cm	
Overall Dimensions, L x W x H	15-3/4 x 8-1/4 x 22-1/2 in. / 40 x 21 x 57 cm	
Pump Inlet & Outlet	1/4 in. FPT Rear Discharge	
Shipping Weight	68 lbs. / 31 kg	64 lbs. / 29 kg
Cat. No. (120V, 60Hz, 10Amps)	**13271-082** $3415	**13271-078** $2675
Cat. No. (240V, 50Hz, 5Amps)	**13271-084** $3440	**13271-080** $2700

Note: Cooling capacity, Watts x 3.41 = BTUs/hr. Performance specifications determined at ambient temperature of 20°C/68°F. For 50Hz units, derate cooling capacity by 17%.

Cooling



Heating



VWR Signature Refrigerated/Heating Circulating Baths, 13 Liter, Low Temperature Control

- Powerful Cooling to -30°C
- Large 13L Reservoirs
- Energy Efficient Systems

The 1157P and 1156D have greater heat removal over a broad temperature range combined with a large reservoir.

A unique energy management and refrigeration system provides up to 50% more energy efficiency than traditional systems. This technology saves energy by delivering the precise amount of refrigerant for a given heat load. It allows refrigeration to be used at high temperatures to cool the bath quickly.

Programmable Model 1157P. The programmable controller enhanced features of time/temperature programming and remote probe capability. RS-232 interface and PC programming software are standard. LabVIEW™ drivers and Excel macros offer even greater programming and data logging convenience.

Digital Model 1156D. This model offers excellent temperature range and stability and is your best choice when remote probe, time/temperature programming and communication software are not required. Perfect for applications on a budget.

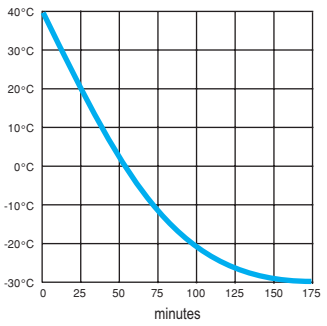
Controllers described on pages 4-5. Accessories listed on page 26.

Ideal For: *Low Temperature Calibration • Cloud & Pour Point Testing • Cell Freezing Low Temperature Reactions • Distillation Condensers • Low Temperature Reactions General Laboratory Cooling • Rotary Evaporators • Spectrophotometers • Viscosity Studies*

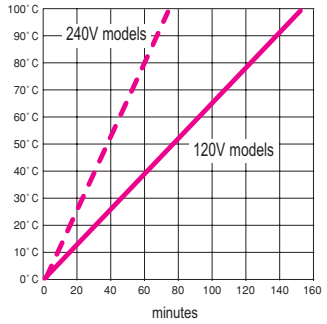
Specifications	Model 1157P	Model 1156D
Temperature Range / Stability	-30°C to 200°C / ±0.01°C	
Controller / RS-232	Programmable / Yes	Digital / Yes
Readout / Accuracy	Graphics LCD, °C or °F / ±0.25°C	
Reservoir Capacity	13 liters	
Cooling Capacity	660 Watts @ +20°C, 480 Watts @ 0°C, 240 Watts @ -20°C, 100 Watts @ -30°C	
Heater	1100 Watt (120V models), 2200 Watt (240V models)	
Pressure Flow Rate	5-speed (Duplex Pump), 11 to 24 liters/min.	
Suction Flow Rate	5-speed, 8 to 18 liters/min.	
Safety Cutoffs	Adjustable Over-Temperature & Low-Liquid Cutoff	
Working Access, L x W x D	6 x 11 x 5-1/2 in. / 15.2 x 28 x 14 cm	
Overall Dimensions, L x W x H	17 x 15-1/2 x 24-3/4 in. / 43x 39.4 x 63 cm	
Pump Inlet & Outlet	1/4 in. FPT Rear Discharge	
Shipping Weight	137 lbs. / 62.2 kg	141 lbs. / 64 kg
Cat. No. (120V, 60Hz, 12Amps)	**13271-106** $3515	**13271-102** $2895
Cat. No. (240V, 50Hz, 6Amps)	**13271-108** $3540	**13271-104** $2920

Note: Cooling capacity, Watts x 3.41 = BTUs/hr. Performance specifications determined at ambient temperature of 20°C/68°F. For 50Hz units, derate cooling capacity by 17%.

Cooling



Heating



VWR Signature Refrigerated/Heating Circulating Baths, 28 Liter

- Temperatures to -25°C
- Reservoir Holds More or Larger Samples
- Large Workspace on Top with Wide Access Opening

The 1187P and 1186D's large access reservoir of 10-1/4 x 10-1/4 inches allows for convenient immersion of larger or more samples. The 28 liter capacity helps maintain precise temperature control and compensate for sudden heat load changes.

A unique refrigeration system and energy managing controllers are up to 50% more energy efficient than traditional systems. This technology saves energy by delivering the precise amount of refrigerant for a given heat load. Refrigeration can be used at high temperatures to cool the bath quickly. All models feature excellent stability, redundant over temperature and low liquid level protection.

Programmable Model 1187P. Features include time/temperature programming and remote probe capability. RS-232 interface and PC programming software are standard. LabVIEW™ drivers and Excel macros offer greater programming and data logging convenience.

Digital Model 1186D. The digital controller offers great performance and is your ideal choice when remote probe, time/temperature programming and communication software are not required. Perfect for applications on a budget.

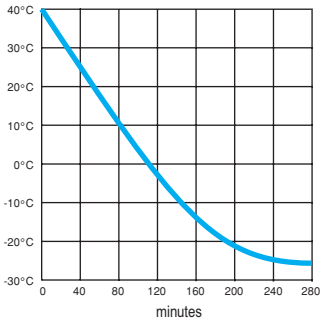
Controllers described on pages 4-5. Accessories listed on page 26.

Ideal For: *Temperature Calibration • Cloud & Pour Point Testing • Distillation Condensers Low Temperature Reactions • General Laboratory Cooling • Rotary Evaporators Spectrophotometers • Sample Tempering • Viscosity Studies*

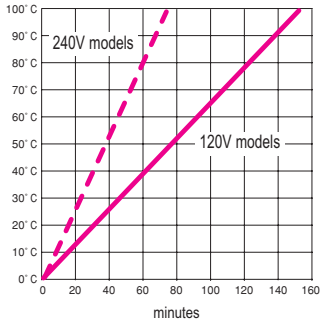
Specifications	Model 1187P	Model 1186D
Temperature Range / Stability	-25°C to 150°C / ±0.01°C	
Controller / RS-232	Programmable / Yes	Digital / Yes
Readout / Accuracy	Graphics LCD, °C or °F / ±0.25°C	
Reservoir Capacity	28 liters	
Cooling Capacity	700 Watts @ +20°C, 510 Watts @ 0°C, 260 Watts @ -20°C	
Heater	1100 Watt (120V models), 2200 Watt (240V models)	
Pressure Flow Rate	5-speed (Duplex Pump), 11 to 24 liters/min.	
Suction Flow Rate	5-speed, 8 to 18 liters/min.	
Safety Cutoffs	Adjustable Over-Temperature & Low-Liquid Cutoff	
Working Access, L x W x D	10-1/4 x 10-1/4 x 10-1/4 in. / 26 x 26 x 26 cm	
Overall Dimensions, L x W x H	19-1/2 x 27-1/2 x 18-1/2 in. / 49.5 x 70 x 47 cm	
Pump Inlet & Outlet	1/4 in. FPT Rear Discharge	
Shipping Weight	160 lbs. / 72.6 kg	160 lbs. / 72.6 kg
Cat. No. (120V, 60Hz, 12Amps)	**13271-130** $3625	**13271-126** $3070
Cat. No. (240V, 50Hz, 6Amps)	**13271-132** $3650	**13271-128** $3095

Note: Cooling capacity, Watts x 3.41 = BTUs/hr. Performance specifications determined at ambient temperature of 20°C/68°F. For 50Hz units, derate cooling capacity by 17%.

Cooling



Heating



VWR Signature Refrigerated/Heating Circulating Baths, 13 Liter, Extra-Low Temperature Control

- Powerful Cooling to -45°C
- Ample Reservoir For Sample Immersion
- Enlarged Access Opening

The 1197P & 1196D circulators provide extended cooling down to a temperature of -45°C with a large 13 liter reservoir. With this extra-low capability and removal of 900 Watts @ 20°C, these circulators cover a wide range of applications.

The unique refrigeration system and energy managing controllers are up to 50% more energy efficient than traditional systems. This technology saves energy by delivering the precise amount of refrigerant for a given heat load.

Refrigeration can be used at high temperatures to cool the bath quickly. Both models feature a 5-speed adjustable pressure/suction pump, excellent stability, redundant over-temperature and low-liquid level protection.

Programmable Model 1197P. This model has a wide temperature range and high stability. Additional features include time/temperature programming and remote probe capability. RS-232 interface and software for PC programming are standard. LabVIEW™ drivers and Excel macros offer even greater programming and data logging convenience.

Digital Model 1196D. The digital controller offers great performance and is your ideal choice when remote probe, time/temperature programming and communication software are not required. Perfect for applications on a budget.

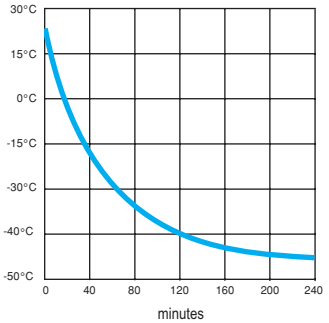
Controllers described on pages 4-5. Accessories listed on page 26.

Ideal For: *Low Temperature Calibration • Low Temperature Reactions • Cell Freezing Cloud & Pour Point Testing • Distillation Condensers • General Laboratory Cooling Rotary Evaporators • Spectrophotometers • Viscosity Studies*

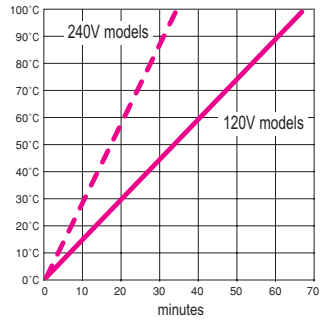
Specifications	Model 1197P	Model 1196D
Temperature Range / Stability	-45°C to 200°C / ±0.01°C	
Controller / RS-232	Programmable / Yes	Digital / Yes
Readout / Accuracy	Graphics LCD, °C or °F / ±0.25°C	
Reservoir Capacity	13 liters	
Cooling Capacity	900 Watts @ +20°C, 825 Watts @ 0°C, 200 Watts @ -30°C	
Heater	1100 Watt (120V models), 2200 Watt (240V models)	
Pressure Flow Rate	5-speed (Duplex Pump), 11 to 24 liters/min.	
Suction Flow Rate	5-speed, 8 to 18 liters/min.	
Safety Cutoffs	Adjustable Over-Temperature & Low-Liquid Cutoff	
Working Access, L x W x D	6 x 11 x 5-1/2 in. / 15.2 x 28 x 14 cm	
Overall Dimensions, L x W x H	17 x 15-1/2 x 24-3/4 in. / 43x 39.4 x 63 cm	
Pump Inlet & Outlet	1/4 in. FPT Rear Discharge	
Shipping Weight	148 lbs. / 67 kg	
Cat. No. (120V, 60Hz, 12Amps)	**13271-118** $3985	**13271-114** $3265
Cat. No. (240V, 50Hz, 6Amps)	**13271-120** $4010	**13271-116** $3280

Note: Cooling capacity, Watts x 3.41 = BTUs/hr. Performance specifications determined at ambient temperature of 20°C/68°F. For 50Hz units, derate cooling capacity by 17%.

Cooling



Heating



Chillers Improve Your Operations

There are numerous advantages in using chillers over tap water cooling of scientific instruments, medical instruments and prodcution machinery.

They offer flexibility in placement, with no need of placing your equipment near a water source and drain. Temperature and pressure are more consistent throughout the year. There is no build up of mineral deposits in the cooling system to act as a thermal barrier reducing heat transfer. Finally, the costs associated with water supply and disposal are eliminated.

How to choose a chiller

Choosing the right size recirculating chiller adds to the economies of its use. The optimum size needed is based on the amount of heat your application is generating, plus additional power to maintain temperature under varying loads.

The manufacturer of the device you are cooling should supply heat removal information. If this information is not available, please call your VWR representative to discuss your application.

If heat removal information is not available, here's how to calculate the heat load of your system:

$$\textbf{Watts} = \frac{[\Delta T° \times (K)]}{S}$$

In Celsius:

$$\text{Watts} = \frac{[\Delta T° \times (4{,}186)]}{S}$$

In Fahrenheit:

$$\text{Watts} = \frac{[\Delta T° \times (2{,}326)]}{S}$$

Where:

ΔT= The difference between incoming and outgoing tap water temperatures of your instrument. Measure carefully using the same thermometer for both locations.

S = The number of seconds to fill a one liter container.

K = Conversion constant for density and specific heat of water, and the ratio to convert units measured into watts per hour for Celsius or Fahrenheit.

Additional Considerations:

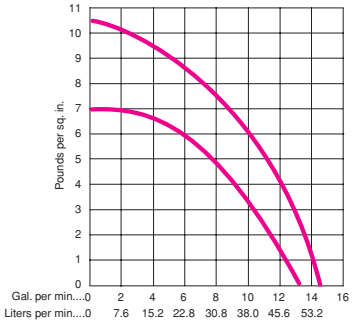
1. If ambient temperature of the cooling location is above 20°C, add 1% to the calculated wattage for each 0.5°C above 20°C.
2. If operating at 50Hz, add 20% to the calculated wattage.
3. If line voltage is consistently below rated voltage, or if you work at high altitudes, add 10% to the calculated wattage.
4. Future additional cooling needs or variability of heat output of existing unit.

Contact your VWR representative for additional assistance about size selection or custom application inquiries.

Pump Comparison

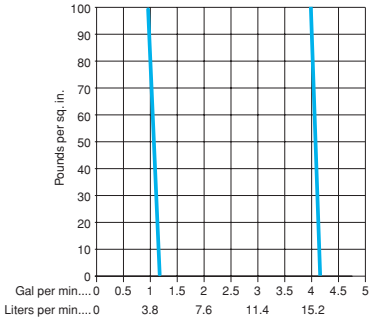
Magnetic Drive Pump

Excellent flow with low pressure characteristics. Extremely quiet and durable.



Positive Displacement Pump

Complete pressure versatility. A popular choice for demanding applications.



VWR Signature Chillers offer a choice of pump

	Magnetic Drive Pump	Positive Displacement Pump
Pressure	10 psi	Adjustable 20-100 psi
Flow Rate	4.3 gpm / 16.3 lpm	1 gpm / 3.8 lpm (1/4 HP to 1/2 HP) 4 gpm / 15.2 lpm (3/4 HP to 1 HP)

External Pressure Reducer. For chillers equipped with high pressure positive displacement pump. Reduces output of chiller to adjustable range of 10-45 psi. **Cat. No. 13270-702** **$300.00**

VWR Signature Recirculating Chiller, 1/4 HP to 1 HP

- Built for Continuous Operation
- Save Money and Increase Efficiency
- Conserve Resources
- Eliminate Temperature Variation
- Choice of Pump

VWR Signature Chillers provide up to 25% more cooling than competitive units without higher prices. You get lower operating temperatures in addition to more heat removal. Our new high-efficiency heat exchanger assures efficient cooling with reserve power to spare. Reserve heat removal capability is especially important when dealing with variable heat loads. This extra cooling power may fill future needs.

With digital convenience and microprocessor control, operating temperature is displayed to 0.1°C, and with the touch of a button, the set temperature can be quickly checked. The display readout is selectable in °C or °F. For convenience in viewing, the control panel is slanted, allowing the LED temperature display to be easily read.

Temperatures are maintained to ±0.5°C. The innovative refrigeration control system senses and allocates the right amount of refrigerant to control cooling precisely. Superior efficiency and precise control are assured by the use of PID controller technology.

The compressor runs quietly and continuously, eliminating the grueling start-stop cycles used in some refrigeration systems. When called for, the microprocessor-based refrigeration system easily changes from "coasting" to full cooling. Result - long compressor life, rapid response.

VWR Signature Series Chillers offer a choice of pump

	Magnetic Drive Pump	Positive Displacement Pump
Pressure	10 psi	Adjustable 20-100 psi
Flow Rate	4.3 gpm / 16.3 lpm	1 gpm / 3.8 lpm (1/4 HP to 1/2 HP) 4 gpm / 15.2 lpm (3/4 HP to 1 HP)

Specifications	Model 1171MD or PD	Model 1173MD or PD	Model 1175MD or PD	Model 1177MD or PD	Model 1179MD or PD
Temperature Range / Stability	-5°C to 40°C / ±0.5°C		-10°C to 40°C / ±0.5°C	-15°C to 40°C / ±0.5°C	
Controller / Readout / Accuracy	Standard / LED, °C or °F / ±0.1°C				
Compressor	1/4 HP	1/3 HP	1/2 HP	3/4 HP	1 HP
Cooling Capacity @ 20°C 10°C 0°C	750 Watts 450 Watts 100 Watts	1100 Watts 780 Watts 350 Watts	1320 Watts 1055 Watts 550 Watts	2500 Watts 1700 Watts 760 Watts	2850 Watts 1925 Watts 940 Watts
Dimensions, H x W x L	24 x 14-3/8 x 26-1/2 in. / 61 x 36.5 x 67.3 cm				
Shipping Weight	164 lbs. / 74.5 kg	167 lbs. / 76 kg	169 lbs. / 76.8 kg	224 lbs. / 101.8 kg	225 lbs. / 102.3 kg
Magnetic Drive Pump Models Cat. No. (120V, 60 Hz) Cat. No. (208-230V, 60 Hz) Cat. No. (240, 50 Hz)	 **13271-184** $2235 (6.8A) N/A **13271-186** $2280 (3.4A)	 **13271-192** $2470 (8A) N/A **13271-194** $2505 (4A)	 **13271-200** $2745 (13A) N/A **13271-202** $2780 (6.5A)	 N/A **13271-208** $3010 (7.5A) **13271-210** $3045 (7.5A)	 N/A **13271-216** $3450 (8.5A) **13271-218** $3485 (8.5A)
Positive Displacement Pump Models Cat. No. (120V, 60 Hz) Cat. No. (208-230V, 60 Hz) Cat. No. (240V, 50 Hz)	 **13271-188** $2285 (9.6A) N/A **13271-190** $2330 (4.8A)	 **13271-196** $2520 (10.8A) N/A **13271-198** $2555 (5.4A)	 **13271-204** $2795 (15.8A) N/A **13271-206** $2830 (7.9A)	 N/A **13271-212** $3060 (10A) **13271-214** $3095 (10A)	 N/A **13271-220** $3500 (11A) **13271-222** $3535 (11A)

Note: Cooling capacity, Watts x 3.41 = BTUs/hr. Performance specifications determined at ambient temperature of 20°C/68°F. For 50Hz units, derate cooling capacity by 17%.

VWR Signature Refrigerated Chiller, 1.5 HP

- Cooling Capacity to 5200 Watts
- Five Gallon Reservoir
- Choice of Pump

The **Model 117-6155P** is an efficient 1.5 HP chiller offering larger applications immediate cooling (up to 5200 Watts of cooling at 20°C).

This compact powerhouse incorporates an innovative heat transfer system with a unique refrigeration technology that delivers the right amount of cooling for changing heat loads.

The five gallon reservoir has a large opening for quick fill ups and a reservoir drain for convenient drainage. Easy access to the pressure regulator, fluid filter and air filter makes regular maintenance a breeze. The base and side panel air vents provide maximum air flow for enhanced cooling capability.

VWR Signature Rack Mount Refrigerated Chiller

- Cooling Capacity to 390 Watts
- Rack Mount Option with Full Extension Slides
- Competitively Priced

The **Model 117-612** is a new, compact chiller that provides a stable flow of coolant to external apparatus and is ideal for cooling electrophoresis cells, distillation condensers, and CCD cameras as well as other routine applications.

The analog controller provides economical and accurate temperature control. It's easy to use - just dial in your set temperature and go. This unit features a high efficiency heat exchanger, and the rear panel air vents provide maximum air flow for enhanced cooling capability. The self-priming pump ensures very low maintenance.

The Rack Mount Option allows the unit to fit in a standard 19 inch rack and is mounted on full extension slides for easy access to the reservoir.

Specifications	Model 117-6155P	Model 117-612
Temperature Range / Stability	5°C to 35°C / ± 0.5°C	-10°C to +40°C / ±0.2°C
Controller / Readout / Accuracy	Standard / LED, °C or °F / ±0.1°C	Analog / N/A
Compressor	1.5 HP	1/10 HP
Reservoir	19 liters	0.4 liters
Cooling Capacity	5200 Watts / 17,732 BTUs/hr @ 20°C 3600 Watts / 12,276 BTUs/hr @ 10°C 2700 Watts / 9,207 BTUs/hr @ 5°C	390 Watts / 1332 BTUs/hr@ 20°C 290 Watts / 994 BTUs/hr @ 10°C 125 Watts / 427 BTUs/hr @ 0°C
Pressure @ 0 Flow Rate	20 - 100 psi	5.2 psi
Flow Rate @ 0 PSI	4 gpm / 15.2 lpm	1.43 gpm / 5.4 lpm
Fittings	1/2 in. FPT	3/8 in. FPT
Dimensions, H x W x L	30 x 21 x 27 in. / 77 x 53 x 68 cm	13 x 12 x 18.5 in. / 33 x 30.5 x 47 cm
Shipping Weight	450 lbs. / 204 kg	54 lbs. / 24.5 kg
Cat. No. (Electrical)	**13270-112** $4500 (208/230V, 60Hz, 1 PH, 12Amps)	**13270-116** $1650 (120V, 60Hz, 7Amps)
Cat. No. (Electrical)	**13270-114** $4700 (240V, 50Hz, 1 PH, 6Amps)	**13270-118** $1670 (240V, 50 Hz, 3.5Amps)

Note: Cooling capacity, Watts x 3.41 = BTUs/hr. Performance specifications determined at ambient temperature of 20°C/68°F.
For 50Hz units, derate cooling capacity by 17%.

Contact your VWR representative for information on optional pumps.

VWR Signature Heating Immersion Circulator

- Time/Temperature Programmability
- Five Speed Adjustable Pump
- Controllable Through RS-232 Interface
- Remote Probe Capability

Create your personalized bath with the VWR Signature Immersion Circulator. Built on an expandable bridge, this powerful circulator fits on top of most baths and tanks. The strong 5-speed adjustable duplex pump circulates to external applications as well.

Programmable Model 1127P. Features a full graphics display, time and temperature programming with ten programs that can be stored in the controller's memory, each having 50 steps that can be cycled up to 999 times. An RS-232 interface and PC programming software are standard. LabVIEW™ drivers and Excel macros offer even greater programming and data logging convenience. Remote probe capability is also standard.

For internal circulation or external open and closed loop applications, the 1127P has a strong pressure & suction (duplex) pump with five selectable speeds. The optional remote probe provides more accurate control in external circulation.

Controllers described on pages 4-5. Accessories listed on page 26. See page 15 for Open Bath Systems.

The 1127P is shown here with a VWR® Acrylic Open Tank, sold separately. See page 15 for VWR Open Bath Systems.

Ideal For: *Bacteriological Incubation • Calibration • Kinetic Research Cell Culture • Enzyme Assays • Tempering Samples • Viscosity Studies Thawing Frozen Specimens • Warming Culture Media*

Specifications	Model 1127P
Temperature Range / Stability	Amb.+5°C to 200°C* / ±0.05°C*
Controller / RS-232	Programmable / Yes
Readout / Accuracy	Graphics LCD, °C or °F / ±0.25°C
Heater	1100 Watt (120V models), 2200 Watt (240V models)
Pressure Flow Rate	5-speed (Duplex Pump), 11 to 24 liters/min.
Suction Flow Rate	5-speed, 8 to 18 liters/min.
Safety Cutoffs	Adjustable Over-Temperature & Low-Liquid Cutoff
Overall Dimensions, L x W x H	8-3/4 x 15 x 11-1/2 in. / 22.2 x 38.1 x 29.2 cm
Bridge Span	Expands 15 in. to 25 in. / 38.1 cm to 63.5 cm
Immersion, minimum to maximum	2-3/4 in. to 4-1/2 in. / 7 cm to 11.4 cm
Pump Inlet & Outlet	1/4 in. FPT Rear Discharge
Shipping Weight	22 lbs. / 10 kg
Cat. No. (120V, 50-60Hz, 5Amps)	**13271-142** $2245
Cat. No. (240V, 50-60Hz, 2.5Amps)	**13271-144** $2270

* Temperature range and stability vary depending on bath volume, surface area, insulation and type of fluid.

Note: Performance specifications determined at ambient temperature of 20°C/68°F.

TECH TIP

Advantages of Multi-Speed Circulator Pumps

The 2-speed simplex pump in these immersion circulators offers:

Slow Speed

- ✔ Longer Motor Life
- ✔ Quieter Operation
- ✔ Less Bath Turbulence
- ✔ Less Fluid Heating From Friction

Fast Speed

- ✔ Higher Pump Head
- ✔ Use of More Viscous Fluids
- ✔ Better Flow In Small Tubing
- ✔ Quicker Response to Changes
- ✔ Pump to Multiple Systems

VWR Open Bath Systems

- Stainless Steel
- See-Through Acrylic
- Stainless Steel with Refrigeration

Stainless Steel Tanks

Seamless and insulated, they can be used for fluid temperatures up to 300°C. They have a durable powder-coated housing with carrying handles for easy handling and placement.

Acrylic Open Tanks

Provide visibility of immersed samples, never rust, and cost less than stainless steel baths. Their upper working limit is 70°C. The bottoms are elevated 2-1/8 inches (5.4 cm) to allow placement of low profile magnetic stirrers or other devices under the bath.

Refrigerated Stainless Steel Bath

Designed for use with an immersion circulator or other device that controls bath temperature. Without the use of an accessory heating controller, this model cools fluid, uncontrolled, down to the limit of its capability. In conjunction with a VWR immersion circulator, it can produce stable temperatures from 0°C to 200°C.

See page 26 for accessories.

Stainless Steel Open Tanks

Capacity	13 liters	28 liters
Working Access, L x W x D	9 x 11-3/4 x 7-3/4 in. 22.9 x 29.8 x 19.7 cm	11-3/4 x 19-1/2 x 7-3/4 in. 29.8 x 49.5 x 19.7 cm
Shipping Weight	15 lbs. / 6.8 kg	25 lbs. /11.4 kg
Cat. No.	**13270-875** $395	**13270-877** $535

Acrylic Open Tanks

Capacity	8 liters	16 liters	21 liters
Working Access, L x W x D	18 x 5 x 7-1/2 in. 45.7 x 12.7 x 19 cm	18 x 10 x 7-1/2 in. 45.7 x 25.4 x 19 cm	18 x 13-1/8 x 7-1/2 in. 45.7 x 33.3 x 19 cm
Shipping Weight	7 lbs. / 3.2 kg	9 lbs. / 4.1 kg	11 lbs. / 5 kg
Cat. No.	**13270-882** $195	**13270-884** $205	**13270-886** $270

Refrigerated Stainless Steel Bath

Capacity	13 liters
Temperature Range	0°C to 150°C
Cooling Capacity	400 Watts @ 20°C 270 Watts @ 10°C 90 Watts @ 0°C
Working Access, L x W x D	9 x 11-3/4 x 7-3/4 in. 22.9 x 29.8 x 19.7 cm
Overall Dimensions, L x W x D	13-1/2 x 22 x 10 in. 34.3 x 55.9 x 25.4 cm
Shipping Weight	60 lbs. / 27.3 kg
Cat. No. (120V, 60Hz, 3A)	**13270-879** $1395
Cat. No. (240V,50Hz, 1.5A)	**13270-880** $1425

Note: Cooling capacity, Watts x 3.41 = BTUs/hr.
Performance specifications determined at ambient temperature of 20°C/68°F.

VWR Signature Heating Circulating Baths

- Larger Access Area For Above Ambient Temperature Control
- Compact Design
- Carrying Handles On The 13L And 28L Models for Easy Placement

VWR Signature heating circulating baths offer the widest temperature range, high stability and 5-speed pressure & suction (duplex) pump. The pump permits operation in open and closed loop applications. These models provide quiet operation and are compact for easy placement in crowded work stations.

Programmable Models, 1137P, 1137-1P and 1137-2P. The Programmable Controller offers advanced operation features combined with time/temperature programming and remote probe capability. RS-232 interface for PC communication is standard. LabVIEW™ drivers and Excel macros offer even greater programming and data logging convenience.

Digital Models, 1136D, 1136-1D and 1136-2D. The digital controller offers great performance and is your ideal choice when remote probe, time/temperature programming and communication software are not required. Perfect for applications on a budget.

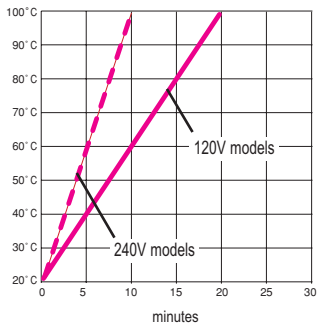
Controllers described on pages 4-5. Accessories listed on page 26.

For operation closer to ambient, use the tap water cooling coil, listed on page 26, or Model 1102 ambient bath cooler listed on page 22.

For below ambient work, add the Flow-Through Cooler Models 1106 or 1108, or Immersion Probe Cooler Models 1107 or 1109 listed on page 22.

Ideal For: *Calibration • Desitometers • Enzyme Assays • HPLC Columns DNA Melting Curves • Kinetic Research • Specific Gravity Determinations Temperature Gradients • Polymer Testing • Spectrophotometer Flow Cells Viscosity Measurements*

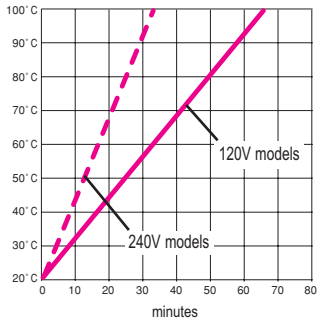
6 Liter Model Heating



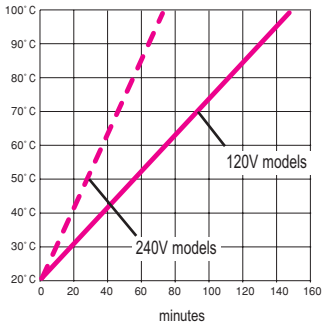
Specifications For Programmable Models	Model 1137P	Model 1137-1P	Model 1137-2P
Temperature Range / Stability	5°C above ambient to 200°C / ±0.5°C	5°C above ambient to 150°C / ±0.5°C	
Controller / Readout / Accuracy	Programmable / Graphics LCD, °C or °F / ±0.25°C		
Reservoir Capacity	6 liters	13 liters	28 liters
Heater	1100 Watt (120V models), 2200 Watt (240V models)		
Pressure Flow Rate	5-speed (Duplex Pump), 11 to 24 liters/min.		
Suction Flow Rate	5-speed, 8 to 18 liters/min.		
Safety Cutoff	Adjustable Over-Temperature and Low-Liquid Cutoff		
Working Access, L x W x D	5-1/4 x 5-1/4 x 5-1/2 in. 13.3 x 13.3 x 14 cm	5-1/4 x 8-1/2 x 8 in. 13.3 x 21.6 x 19.7 cm	12-1/8 x 10-3/8 x 8 in. 30.8 x 26.4 x 20.3 cm
Overall Dimensions, L x W x H	14-3/4 x 8-1/4 x 14 in. 37.5 x 21 x 35.5 cm	15-1/2 x 10-7/8 x 14-3/4 in. 39 x 27.5 x 37.5 cm	22-3/4 x 13-3/16 x 14-3/4 in. 55.8 x 33.5 x 37.5 cm
Pump Inlet & Outlet	1/4 in. FPT Rear Discharge		
Shipping Weight	27 lbs. / 12.2 kg	37 lbs. / 16.8 kg	47 lbs. / 21.3 kg
Cat. No. (120V, 60Hz, 10Amps)	**13271-156** $2490	**13271-168** $2645	**13271-180** $2815
Cat. No. (240V, 50Hz, 5Amps)	**13271-158** $2515	**13271-170** $2670	**13271-182** $2840

Note: Performance specifications determined at ambient temperature of 20°C/68°F.

13 Liter Model Heating



28 Liter Model Heating



Specifications For Digital Models	Model 1136D	Model 1136-1D	Model 1136-2D
Temperature Range / Stability	5°C above ambient to 200°C / ±0.5°C	5°C above ambient to 150°C / ±0.5°C	
Controller / Readout / Accuracy	Digital / Graphics LCD, °C or °F / ±0.25°C		
Reservoir Capacity	6 liters	13 liters	28 liters
Heater	1100 Watt (120V models), 2200 Watt (240V models)		
Pressure Flow Rate	5-speed (Duplex Pump), 11 to 24 liters/min.		
Suction Flow Rate	5-speed, 8 to 18 liters/min.		
Safety Cutoff	Adjustable Over-Temperature and Low-Liquid Cutoff		
Working Access, L x W x D	5-1/4 x 5-1/4 x 5-1/2 in. 13.3 x 13.3 x 14 cm	5-1/4 x 8-1/2 x 8 in. 13.3 x 21.6 x 19.7 cm	12-1/8 x 10-3/8 x 8 in. 30.8 x 26.4 x 20.3 cm
Overall Dimensions, L x W x H	14-3/4 x 8-1/4 x 14 in. 37.5 x 21 x 35.5 cm	15-1/2 x 10-7/8 x 14-3/4 in. 39 x 27.5 x 37.5 cm	22-3/4 x 13-3/16 x 14-3/4 in. 55.8 x 33.5 x 37.5 cm
Pump Inlet & Outlet	1/4 in. FPT Rear Discharge		
Shipping Weight	23 lbs. / 10.4 kg	33 lbs. / 15 kg	43 lbs. / 19.5 kg
Cat. No. (120V, 60Hz, 10 Amps)	**13271-152** $2025	**13271-164** $2070	**13271-176** $2265
Cat. No. (240V, 50Hz, 5 Amps)	**13271-154** $2050	**13271-166** $2095	**13271-178** $2295

Note: Performance specifications determined at ambient temperature of 20°C/68°F.

VWR Standard and Analog Controllers

These economical controllers are perfect for applications that require less critical control.

The Standard Controller offers digital set and read to 0.1°C, three user-defined temperature preset buttons and microprocessor control. The Analog Controller, available on selected models, offers temperature readout via the supplied thermometer. See details on page 5.

VWR Refrigerated/Heating Circulating Baths, 6 Liter, Low Profile Design

- Convenient for Shelf Placement
- Work Space on Bath Top
- Use on Mobile Carts

Temperature range, cooling capacity and pumping along with the low profile design can be placed on a shelf to free up bench space while having eye-level access to the controls. On the benchtop, the lower profile permits easier access to the reservoir.

Extra space on the stainless steel top can be used as an additional work area. The wider footprint offers stability for calibration work or where mobility on a cart is necessary.

Standard Model 1140S. Designed for routine use up to 150°C, this model economically delivers the same cooling as more expensive models. The convenient read-and-set LED display plus stability of 0.05°C meets most requirements. The pump is a 2-speed simplex pump for closed loop applications.

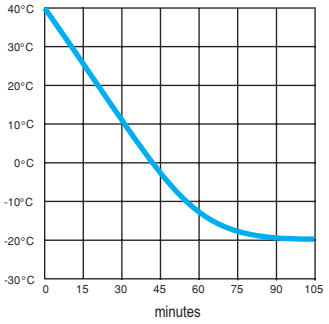
Controllers described on pages 4-5. Accessories listed on page 26.

Ideal For: *Calibration • Chromatography Columns • Densitometers Distillation Condensers • Electrophoresis Apparatus • Polarimeters General Laboratory Cooling • Isoelectric Focusing • Refractometers Rotary Evaporators • Spectrophotometers • Viscometers*

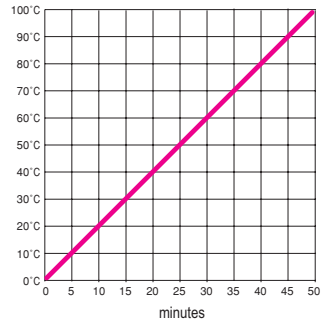
Specifications	Model 1140S
Temperature Range / Stability	-20° to 150°C / ±0.05°C
Controller / Readout / Accuracy	Standard / LED, °C or °F / ±0.5°C
Reservoir Capacity	6 liters
Cooling Capacity	200 Watts @ +20°C, 140 Watts @ 0°C, 100 Watts @ -10°C
Heater	1100 Watt (120V models), 1600 Watt (240V models)
Pressure Flow Rate	2-speed (Simplex Pump), 9 or 15 liters/min.
Safety Cutoff	Adjustable Over-Temperature & Low-Liquid Cutoff
Working Access, L x W x D	5-1/4 x -5-1/4 x 5-1/2 in. / 13.3 x 13.3 x 14 cm
Overall Dimensions, L x W x H	15-3/4 x 18-3/4 x 17 in. / 40 x 47.6 x 43.2 cm
Pump Inlet & Outlet	1/4 in. FPT Rear Discharge
Shipping Weight	65 lbs. / 29.5 kg
Cat. No. (120V, 60Hz, 10Amps)	**13271-086** $2045
Cat. No. (240V, 50Hz, 5Amps)	**13271-088** $2070

Note: Cooling capacity, Watts x 3.41 = BTUs/hr. Performance specifications determined at ambient temperature of 20°C/68°F. For 50Hz units, derate cooling capacity by 17%.

Cooling



Heating



VWR Refrigerated/Heating Circulating Baths, 6 Liter, Space-Saving Design

- Most Popular Design
- Saves Bench Space, Only 8-1/4 in. Wide
- Enhanced Cooling Capacity
- Quiet Operation

Featuring a 6-liter reservoir in a vertical design, these space-saving units' small footprint, 8-1/4 inches (21cm) wide, help conserve precious bench space.

The refrigeration system is designed to be used below 60°C. This allows rapid bath cooling from 60°C or lower, plus maximizes temperature control and reduces energy consumption above 60°C. The hermetically sealed compressor is designed for years of maintenance-free use.

Standard Model 1160S. With great cooling capacity, this space saver combines high performance and economy. The bright LED display provides convenient read and set capability plus stability of ±0.05°C meets most requirements. Frequently used for electrophoresis cells, viscometers and general lab cooling.

Analog Controller Model 1162A has the same cooling capability as the Model 1160S. With a stability of ± 0.2°C, it is perfect for routine lab applications where highest accuracy and stability are not critical. An excellent alternative to tap water cooling for rotary evaporators and condensers at a low price. Convenient skirted dial with thermometer readout.

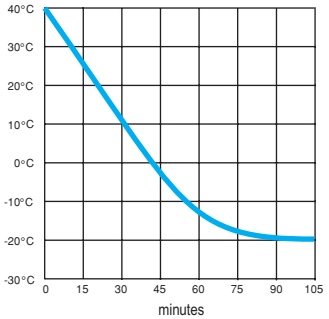
Controllers described on pages 4-5. Accessories listed on page 26.

Ideal For: *Calibration • Chromatography Columns • Densitometers • Distillation Condensers Electrophoresis Apparatus • Polarimeters • General Laboratory Cooling • Isoelectric Focusing Refractometers • Rotary Evaporators • Spectrophotometers • Viscometers*

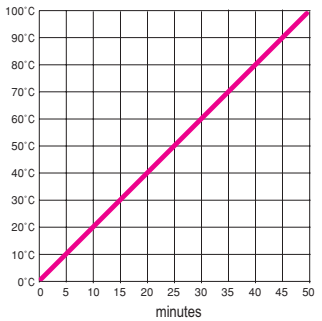
Specifications	Model 1160S	Model 1162A
Temperature Range / Stability	-20° to 150°C / ±0.05°C	-20° to 100°C / ±0.2°C
Controller / Readout / Accuracy	Standard / LED, °C or °F / ±0.5°C	Analog / Thermometer / N/A
Reservoir Capacity	6 liters	
Cooling Capacity	200 Watts @ +20°C, 140 Watts @ 0°C, 100 Watts @ -10°C	
Heater	1100 Watt (120V models), 1600 Watt (240V models)	
Pressure Flow Rate	2-speed (Simplex Pump), 9 or 15 liters/min.	
Safety Cutoff	Adjustable Over-Temperature & Low-Liquid Cutoff	
Working Access, L x W x D	5-1/4 x 5-1/4 x 5-1/2 in. / 13.3 x 13.3 x 14 cm	
Overall Dimensions, L x W x H	15-3/4 x 8-1/4 x 22-1/2 in. / 40 x 21 x 57.1 cm	
Pump Inlet & Outlet	1/4 in. FPT Rear Discharge	
Shipping Weight	62 lbs. / 28 kg	
Cat. No. (120V, 60Hz, 10Amps)	**13271-074** $2045	**13271-070** $1775
Cat. No. (240V, 50Hz, 5Amps)	**13271-076** $2070	**13271-072** $1800

Note: Cooling capacity, Watts x 3.41 = BTUs/hr. Performance specifications determined at ambient temperature of 20°C/68°F. For 50Hz units, derate cooling capacity by 17%.

Cooling



Heating



VWR Refrigerated/Heating Circulating Baths, 13 Liters, Low Temperature -30°C, and 13 Liters, Extra-Low Temperature -40°C

- Very Powerful Cooling
- Two Models with Excellent Heat Removal
- Enlarged Access Opening
- Ample Reservoir for Sample Immersion

The **Standard Model 1150S** has excellent heat removal over a broad temperature range combined with a large reservoir. The **Standard Model 1190S** circulators provide exceptional cooling, down to a temperature of -40°C and a large 13 liter reservoir.

Both these models have a +150°C upper temperature limit with excellent cooling capacity. Refrigeration can be used at high temperatures to cool the bath quickly. It is particularly useful where high heat removal is needed at closer to ambient temperature.

The 2-speed simplex pump is suitable for closed loop applications. Microprocessor controller with LED set-and-read at a price comparable to less convenient analog controllers make these models an excellent value. Both models feature outstanding stability as well as redundant over temperature and low liquid level protection.

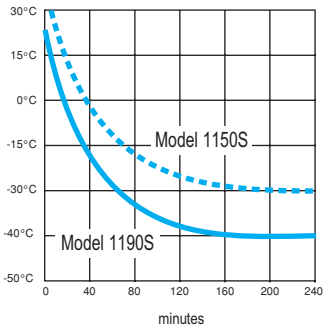
Controllers described on pages 4-5. Accessories listed on page 26.

Ideal For: *Low Temperature Calibration • Low Temperature Reactions • Cell Freezing Cloud & Pour Point Testing • Distillation Condensers • General Laboratory Cooling Rotary Evaporators • Spectrophotometers • Viscosity Studies*

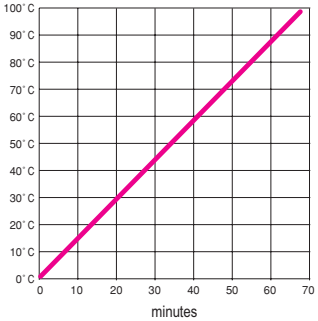
Specifications	Model 1150S	Model 1190S
Temperature Range / Stability	-30° to 150°C / ±0.05°C	-40° to 150°C / ±0.05°C
Controller / Readout / Accuracy	Standard / LED, °C or °F / ±0.5°C	
Reservoir Capacity	13 liters	
Cooling Capacity	660 Watts @ +20°C 480 Watts @ 0°C, 240 Watts @ -20°C	900 Watts @ +20°C 825 Watts @ 0°C, 200 Watts @ -30°C
Heater	1100 Watt (120V models), 1600 Watt (240V models)	
Pressure Flow Rate	2-speed (Simplex Pump), 9 or 15 liters/min.	
Safety Cutoff	Adjustable Over-Temperature & Low-Liquid Cutoff	
Working Access, L x W x D	6 x 11 x 5-1/2 in. / 15.2 x 28 x 14 cm	
Overall Dimensions, L x W x H	17 x 15-1/2 x 24-3/4 in. / 43 x 39.4 x 62.9 cm	
Pump Inlet & Outlet	1/4 in. FPT Rear Discharge	
Shipping Weight	143 lbs. / 65 kg	140 lbs. / 63.5 kg
Cat. No. (120V, 60Hz, 12Amps)	**13271-098** $2315	**13271-110** $2880
Cat. No. (240V, 50Hz, 6Amps)	**13271-100** $2340	**13271-112** $2905

Note: Cooling capacity, Watts x 3.41 = BTUs/hr. Performance specifications determined at ambient temperature of 20°C/68°F. For 50Hz units, derate cooling capacity by 17%.

Cooling



Heating



VWR Refrigerated/Heating Circulating Baths, 28 Liter

- Temperatures to -25°C
- Work Space on Top with Big Access Opening
- Reservoir Holds More or Larger Samples

The **Standard Model 1180S's** large access reservoir of 10-1/4 x 10-1/4 inches allows convenient immersion of larger or more samples. The 28 liter capacity also helps to maintain precise temperature control and compensate for sudden heat load changes.

Refrigeration can be used at high temperatures to cool the bath quickly. This model features excellent stability, and redundant over temperature and low liquid level protection.

The 2-speed simplex pump satisfies many applications having a closed loop configuration. Microprocessor controller with convenient LED set-and-read delivers excellent performance at a modest price.

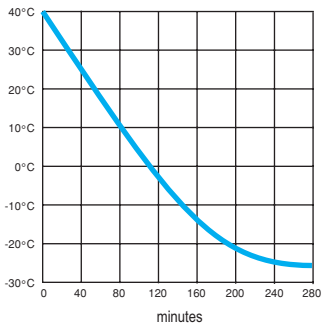
Controllers described on pages 4-5. Accessories listed on page 26.

Ideal For: *Low Temperature Calibration • Cell Freezing • Viscosity Studies Rotary Evaporators • Low Temperature Reactions • Distillation Condensers Cloud & Pour Point Testing • General Laboratory Cooling • Spectrophotometers*

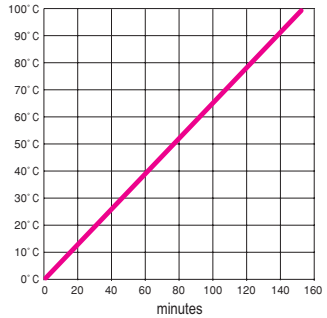
Specifications	Model 1180S
Temperature Range / Stability	-25° to 150°C / ±0.05°C
Controller / Readout / Accuracy	Standard / LED, °C or °F / ±0.5°C
Reservoir Capacity	28 liters
Cooling Capacity	700 Watts @ +20°C, 510 Watts @ 0°C, 260 Watts @ -20°C
Heater	1100 Watt (120V models), 1600 Watt (240V models)
Pressure Flow Rate	2-speed (Simplex Pump), 9 or 15 liters/min.
Safety Cutoff	Adjustable Over-Temperature & Low-Liquid Cutoff
Working Access, L x W x D	10-1/4 x 10-1/4 x 10-1/4 in. / 26 x 26 x 26 cm
Overall Dimensions, L x W x H	19-1/2 x 27-1/2 x 18-1/2 in. / 49.5 x 70 x 47 cm
Pump Inlet & Outlet	1/4 in. FPT Rear Discharge
Shipping Weight	160 lbs. / 72.6 kg
Cat. No. (120V, 60Hz, 12Amps)	**13271-122** $2585
Cat. No. (240V, 50Hz, 6Amps)	**13271-124** $2610

Note: Cooling capacity, Watts x 3.41 = BTUs/hr. Performance specifications determined at ambient temperature of 20°C/68°F. For 50Hz units, derate cooling capacity by 17%.

Cooling



Heating



VWR Immersion & Flow-Through Cooler

- Compact Package
- Designed For Continuous Low Cost Operation
- Replaces Dry Ice or Liquid Nitrogen

These coolers provide low temperature capabilities for non-refrigerated circulators and baths, for additional cooling capacity, and for replacing dry ice or liquid nitrogen. These units run at maximum cooling rate. Temperature control should be provided by an external circulator.

Immersion coolers are excellent for trapping and dewar-type applications, and reduce the expense of using dry ice or liquid nitrogen. Three feet of flexible hose allows convenient placement of the cooling probe.

Flow-through models must be used in-line with a circulator pump. The high cooling efficiency of the flow-through heat exchanger requires anti-freeze solution in the circulating system.

Specifications	Model 1107	Model 1109	Model 1106	Model 1108
Style	Immersion		Flow-Through	
Temperature Range	-35°C to 40°C	-45°C to 40°C	-20°C to 40°C	-25°C to 40°C
Cooling Capacity @ -30°C 20°C	140 Watts 975 Watts	265 Watts 1050 Watts	200 Watts 575 Watts	260 Watts 745 Watts
Probe Coil diameter x length	1-1/2 dia. x 4 in. 3.8 dia. x 10.2 cm	3 dia. x 9-1/4 in. 7.6 dia. x 23.5 cm	—N/A— —N/A—	
Inlet & Outlet Size	—N/A—		3/8 in. FPT	
Dimension, L x W x H	17 x 14 x 14 in. / 43.2 x 35.6 x 35.6 cm			
Shipping Weight	76 lbs. / 34.5 kg	82 lbs. / 37.3 kg	72 lbs. / 32.6 kg	78 lbs. / 35.5 kg
Cat. No. (120V, 60Hz, 5Amp)	**13271-500** $1320	**13271-504** $1470	**13271-506** $1195	**13271-502** $1390

Note: Cooling capacity, Watts x 3.41 = BTUs/hr. Performance specifications determined at ambient temperature of 20°C/68°F. For 50Hz units, derate cooling capacity by 17%.

VWR Model 1102 Ambient Bath Cooler

- Aids in Closer-to-Ambient Operation
- Rapidly Cools High Temperature Fluids

Heating circulators can normally control within 5° to 15°C above ambient. When connected to a heating circulator, this air-cooled heat exchanger rapidly cools down fluids from high temperatures, and allows a circulator to control within 2°C of ambient.

A 2-speed fan allows choice of cooling rates. An external pumping source such as a heating circulator is required. Wetted parts are brass and copper.

Temperature Range	Up to 200°C
Inlet & Outlet Fittings	1/4 in. FPT
Overall Dimensions, L x W x H	8 x 9 x 11-1/2 in. / 23 x 20 x 29 cm
Shipping Weight	12 lbs. / 5.5 kg
Cat. No. (120V, 60Hz, 0.4Amps)	**13271-066** $315
Cat. No. (240V, 50Hz, 0.2Amps)	**13271-069** $335

VWR Model 1104 Heating Recirculator

- Low Cost Pumping & Heating
- Open or Closed Loop Applications

Connect a Model 1104 to a tank or system for low-cost, accurate temperature control.

Great for routine applications such as thawing media or plasma. The sealed reservoir allows use with open tanks or closed loop applications. Fittings for 1/2 in. i.d. tubing allow for easy installation. Wetted parts are stainless steel, PVC, brass and nylon.

Temperature Range, Stability	Ambient to 70°C, ±0.2°C
Reservoir Capacity	0.5 liter
Heater	750 Watts
Pumping	100 gal/hr
Safety Cutoffs	Adjustable Over-Temperature & Low Liquid
Overall Dimensions, L x W x D	8 x 9-1/2 x 8 in. / 20 x 24 x 20 cm
Shipping Weight	12 lbs. / 5.5 kg
Cat. No. (120V, 60Hz, 6.6Amps)	**13271-060** $660
Cat. No. (240V, 50Hz, 3.3Amps)	**13271-063** $685

VWR Heating Immersion Circulators

- Economical and Easy-to-Read Controllers
- Two Selectable Pump Speeds
- Dual-Safety Protection Standard

Design your own circulating bath with a VWR Immersion Circulator. These circulators clamp on to either a standard lab stand or walls of a tank up to 1-13/16 inch thick. The 2-speed pressure (simplex) pump minimizes turbulence in small tanks and provides higher flow and greater uniformity in large tanks. An adjustable flow director accepts 1/2 inch (13mm) tubing for external circulation.

Standard Model 1122S. The PID controller provides precise temperature control and greater temperature stability. The adjustable PID parameters give greater precision. It comes standard with three user-defined temperature preset buttons for your most commonly used applications.

Low Cost Analog Model 1112A. Analog Controller offers good temperature control for routine lab applications. Proportional heater control combined with redundant safety backup makes this analog model an excellent value. Monitor your bath's temperature via the supplied thermometer.

Controllers described on pages 4-5. Accessories listed on page 26. Open Bath Systems described on page 15.

Model 1122S

Model 1112A

Ideal For: *Bacteriological Incubation • Calibration • Kinetic Research • Cell Culture Enzyme Assays • Tempering Samples • Thawing Frozen Specimens • Viscosity Studies Warming Culture Media*

Specifications	1122S	1112A
Temperature Range / Stability	Amb.+5°C to 150°C* / ±0.05°C*	Amb.+5°C to 100°C* / ±0.2°C*
Controller / Readout	Standard / LED °C or °F	Analog / Thermometer
Heater	1100 Watts (120V models), 1600 Watts (240V models)	
Pumping Pressure	2-speed (Simplex pump) 9 or 15 liters/min.	
Tank Occupancy, approx.	6-1/2 x 4-3/4 in. / 16.5 x 12 cm	
Immersion, minimum to maximum	3 in. to 7 in. / 7.6 cm to 17.8 cm	
Overall Dimensions L x W x D	6 x 4-3/4 x 13 in. / 15.2 x 12 x 33 cm	
Shipping Weight	9 lbs. / 4 kg	
Cat. No. (120V, 50-60Hz, 9Amps)	**13271-138** $1220	**13271-134** $725
Cat. No. (240V, 50-60Hz, 4.5Amps)	**13271-140** $1245	**13271-136** $755

* Temperature range and stability vary depending on bath volume, surface area, insulation and type of fluid.

Note: Performance specifications determined at ambient temperature of 20°C/68°F.

TECH TIP

Selectable Pump Speed Advantages:

Slow Speed
- ✔Quieter Operation
- ✔Longer Motor Life
- ✔Minimizes Bath Turbulence

Faster Speed
- ✔Responds Quickly To Changes
- ✔Pumps To Multiple Systems
- ✔Better Flow In Small Tubing

VWRbrand Heating Circulating Baths

- Above-Ambient Temperature Control
- Larger Access Area
- Compact Design
- Carrying Handles on the 13L and 28L for Easy Placement

These above-ambient temperature heating circulators allow larger or more samples, while maintaining excellent stability specifications.

Standard Controller, Models 1130S, 1130-1S and 1130-2S. Microprocessor controller with LED set-and-read at an attractive price makes this model an excellent overall value. The bright LED display is easy to read and continuously displays actual temperature. Set temperature is displayed at the touch of a button. The 2-speed pressure (simplex) pump is used for closed loop applications.

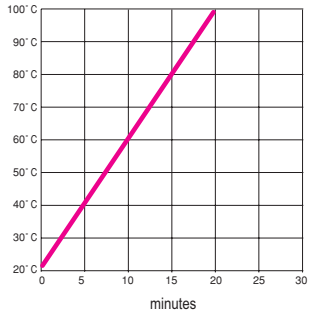
Controllers described on pages 4-5. Accessories listed on page 26.

For operation closer to ambient, use the tap water cooling coil listed on page 26 or Model 1102 ambient bath cooler listed on page 22.

For below ambient work, add the Flow-Through Cooler Models 1106 or 1108, or Immersion Probe Cooler Models 1107 or 1109 listed on page 22.

Ideal For: *Bacteriological Incubation • Calibration • Cell Culture Kinetic Research • Enzyme Assays • Warming Culture Media Tempering Samples • Thawing Frozen Specimens • Viscosity Studies*

6 Liter Model Heating

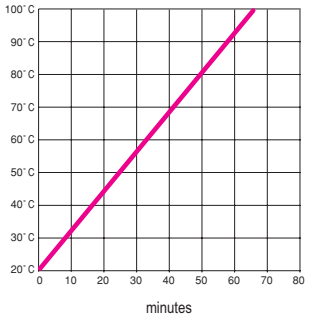


TECH TIP

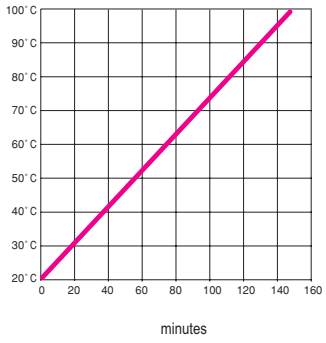
High Temperature Precautions:

- ✔Select a fluid with a flashpoint well above your operating temperature.
- ✔Silicone oils are preferred over mineral oils which may smoke or burn.
- ✔Place circulator in a fume hood if noxious vapors may be present.
- ✔Use high temperature tubing and tubing adapters. See pg. 26.

13 Liter Model Heating



28 Liter Model Heating



Specifications For Standard Models	Model 1130S	Model 1130-1S	Model 1130-2S
Temperature Range / Stability	5°C above ambient to 150°C / ±0.05°C		
Controller / Readout / Accuracy	Standard / LED, °C or °F / ±0.5°C		
Reservoir Capacity	6 liters	13 liters	28 liters
Heater	1100 Watt (120V models), 1600 Watt (240V models)		
Pressure Flow Rate	2-speed (Simplex Pump), 7 or 15 liters/min.		
Safety Cutoff	Adjustable Over-Temperature and Low-Liquid Cutoff		
Working Access, L x W x D	5-1/4 x 5-1/4 x 5-1/2 in. 13.3 x 13.3 x 14 cm	5-1/4 x 8-1/2 x 8 in. 13.3 x 21.6 x 19.7 cm	12-1/8 x 10-3/4 x 8 in. 30.8 x 26.4 x 20.3 cm
Overall Dimensions, L x W x H	14-3/4 x 8-1/4 x 14 in. 37.5 x 21 x 35.5 cm	15-1/2 x 10-7/8 x 14-3/4 in. 39.4 x 27.6 x 37.5 cm	22-3/4 x 13-3/16 x 14-3/4 in. 55.8 x 33.5 x 37.5 cm
Pump Inlet & Outlet	1/4 in. FPT Rear Discharge		
Shipping Weight	21 lbs. / 9.5 kg	31 lbs. / 14 kg	43 lbs. / 19.5 kg
Cat. No. (120V, 60Hz, 10Amps)	**13271-148** $1530	**13271-160** $1575	**13271-172** $1760
Cat. No. (240V, 50Hz, 5Amps)	**13271-150** $1555	**13271-162** $1600	**13271-174** $1785

Note: Performance specifications determined at ambient temperature of 20°C/68°F. For 50Hz units, derate cooling capacity by 17%.

Remote Probes for VWR Signature® Series models only. Use in remote locations - such as open tanks - for superior temperature control. Compensates for heat losses through tubing between the circulator and control point. RTD sensor in 3/16 in. stainless steel sheath.

Description	Cat. No.	Price
External Probe, 10 ft. (3m)	**13270-650**	$155.00
External Probe, 25 ft. (7.6m)	**13270-655**	$165.00
External Probe, 50 ft. (15.2m)	**13270-660**	$185.00

Cooling Coils. For auxiliary cooling of circulators. Reduces minimum operating temperature when connected to a water source.

Description	Cat. No.	Price
Cooling Coil for 1130, 1136, 1137 Series	**13270-700**	$79.00
Cooling Coil for Models 1112, 1122	**13270-722**	$79.00

VWR® Bath Fluids. These heat transfer fluids provide superior thermal stability over their temperature ranges. Check bath compatibility before using. Compatible with stainless steel, not compatible with Buna® or natural rubber.

Description	Temperature Range	Flash Point @ 25°C	Viscosity	Size	Cat. No.	Price
510 Fluid	50° to 150°C	274°C	50 cs	1gal	**13270-794**	$575.00
550 Fluid	100° to 200°C	315°C	125 cs	1gal	**13272-037**	$450.00
710 Fluid	150° to 250°C	302°C	500 cs	1gal	**13270-792**	$500.00
Dynalene™ HC-50	-50° to 60°C	NONE	3 cs	1gal	**13272-034**	$132.00

VWR Clear Bath Algicide. General purpose laboratory algicide. Keeps water baths clean, odor-free, and resistant to black algae. Stainless steel compatible. Use 10-15 drops per gallon to control & prevent algae growth. 8 oz. dispenser bottle treats approx. 400 gallons (1514 L).

Cat. No. **13272-031** $36.30 each, $434.90 Case of 12

Analog Adapter. For use with programmable VWR Signature controllers when direct digital control is not required. Plugs into RS-232 port and provides 10mV/degree analog signal for external monitoring or control.

Cat. No. **13270-665** $320.00

VWR Bath Cleaner. A concentrated liquid for cleaning and removing rust and mineral deposits. For use with stainless steel and plastic baths. Helps remove existing algae prior to treatment with Clear Bath Algicide. 1 oz. (33.8mL) treats approx. 2 gal (8 L). 16 oz. (540.8mL) plastic dispenser bottle.

Cat. **No.13400-060** $23.00

External Pressure Reducer. For chillers equipped with high pressure positive displacement pump. Reduces output of chiller to adjustable range of 10-45 psi.

Cat. No. **13270-702** $300.00

High Temperature Tubing. 3 feet (0.93m) flexible Teflon™ lined, stainless steel overbraid tubing with 1/4 in. quick connects at both ends. For use up to 230°C.

Cat. No. **13270-868** $85.00

Low Temperature Insulated Tubing. Minimizes temperature loss from circulator to external device. 6 feet (1.9m) of 1/2 in. (1.27cm) I.D. Buna N tubing with foam insulation.

Cat. No. **13270-707** $17.00

Temperature Control Equipment At-a-Glance Selection Guide

Model	Temperature Range	Cooling Capacity Watts @ 20°C	Stability	Controller Type	Reservoir Capacity	Readout	Catalog Number	Page
1147P	-20°C to + 200°C	210 Watts	± 0.01°C	Programmable	6 liters	Graphics LCD	**13271-094**	6
1146D	-20°C to +200°C	210 Watts	± 0.01°C	Digital	6 liters	Graphics LCD	**13271-090**	6
1140S	-20°C to +150°C	210 Watts	± 0.05°C	Standard	6 liters	LED	**13271-086**	18
1167P	-20°C to +200°C	210 Watts	± 0.01°C	Programmable	6 liters	Graphics LCD	**13271-082**	7
1166D	-20°C to +200°C	210 Watts	± 0.01°C	Digital	6 liters	Graphics LCD	**13271-078**	7
1160S	-20°C to +150°C	210 Watts	± 0.05°C	Standard	6 liters	LED	**13271-074**	19
1162A	-20°C to +100°C	210 Watts	± 0.2°C	Analog	6 liters	Thermometer	**13271-070**	19
1157P	-30°C to +200°C	690 Watts	± 0.01°C	Programmable	13 liters	Graphics LCD	**13271-106**	8
1156D	-30°C to +200°C	690 Watts	± 0.01°C	Digital	13 liters	Graphics LCD	**13271-102**	8
1150S	-30°C to +150°C	690 Watts	± 0.05°C	Standard	13 liters	LED	**13271-098**	20
1187P	-25°C to +100°C	700 Watts	± 0.01°C	Programmable	28 liters	Graphics LCD	**13271-130**	9
1186D	-25°C to +100°C	700 Watts	± 0.01°C	Digital	28 liters	Graphics LCD	**13271-126**	9
1180S	-25°C to +100°C	700 Watts	± 0.05°C	Standard	28 liters	LED	**13271-122**	21
1197P	-45°C to +200°C	700 Watts	± 0.01°C	Programmable	13 liters	Graphics LCD	**13271-118**	10
1196D	-45°C to +200°C	700 Watts	± 0.01°C	Digital	13 liters	Graphics LCD	**13271-114**	10
1190S	-45°C to +150°C	700 Watts	± 0.05°C	Standard	13 liters	LED	**13271-110**	20
1127P	Ambient +5°C to +200°C	—	± 0.01°C	Programmable	—	Graphics LCD	**13271-142**	14
1122S	Ambient +5°C to +150°C	—	± 0.05°C	Standard	—	LED	**13271-138**	23
1112A	Ambient +5°C to +100°C	—	± 0.2°C	Analog	—	Thermometer	**13271-134**	23
1137P	Ambient +5°C to +200°C	—	± 0.01°C	Programmable	6 liters	Graphics LCD	**13271-156**	16
1136D	Ambient +5°C to +200°C	—	± 0.01°C	Digital	6 liters	Graphics LCD	**13271-152**	17
1130S	Ambient +5°C to +150°C	—	± 0.05°C	Standard	6 liters	LED	**13271-148**	24
1137-1P	Ambient +5°C to +150°C	—	± 0.01°C	Programmable	13 liters	Graphics LCD	**13271-168**	16
1136-1D	Ambient +5°C to +150°C	—	± 0.01°C	Digital	13 liters	Graphics LCD	**13271-164**	17
1130-1S	Ambient +5°C to +150°C	—	± 0.05°C	Standard	13 liters	LED	**13271-160**	24
1137-2P	Ambient +5°C to +150°C	—	± 0.01°C	Programmable	28 liters	Graphics LCD	**13271-180**	16
1136-2D	Ambient +5°C to +150°C	—	± 0.01°C	Digital	28 liters	Graphics LCD	**13271-176**	17
1130-2S	Ambient +5°C to +150°C	—	± 0.05°C	Standard	28 liters	LED	**13271-172**	24
1171MD/1171PD	-5°C to +40°C	750 Watts	± 0.5°C	Standard	6.25 liters	LED	**13271-184/188**	12
1173MD/1173PD	-5°C to +40°C	1320 Watts	± 0.5°C	Standard	6.25 liters	LED	**13271-192/196**	12
1175MD/1175PD	-10°C to +40°C	1150 Watts	± 0.5°C	Standard	6.25 liters	LED	**13271-200/204**	12
1177MD/1177PD	-15°C to +40°C	2500 Watts	± 0.5°C	Standard	6.25 liters	LED	**13271-208/212**	12
1179MD/1179PD	-15°C to +40°C	2850 Watts	± 0.5°C	Standard	6.25 liters	LED	**13271-216/220**	12
117-6155P	5°C to 35°C	5200 Watts	± 0.5°C	Standard	19 liters	LED	**13271-216/220**	13
117-612	-10°C to +40°C	390 Watts	± 0.2°C	Analog	0.4 liters	—	**13271-216/220**	13
1102	Up to 200°C	—	—	—	—	—	**13271-066**	22
1104	Ambient to 70°C	750 Watts	± 0.2°C	Analog	—	—	**13271-060**	22
1106	-20°C to +40°C	575 Watts	—	Flow Through	—	—	**13271-506**	22
1108	-25°C to +40°C	745 Watts	—	Flow Through	—	—	**13271-502**	22
1107	-35°C to +40°C	975 Watts	—	Immersion Probe	—	—	**13271-500**	22
1109	-45°C to +40°C	1050 Watts	—	Immersion Probe	—	—	**13271-504**	22

VWR® Tissue Baths and Slide Handling

Reliable and Durable Histology Products for the Laboratory

Round Tissue Bath 80086-982
Illuminated Tissue Bath 80086-990
Illuminated Tissue Flotation Bath 80086-986
Microscope Slide Storage Cabinet 80086-976 and Cabinet Base 80086-978
Microscope Slide Dispenser 80086-994

VWR offers a complete line of tissue baths and slide handling apparatus designed to meet the needs of today's histology laboratory.

As with all equipment offered by VWR, you can rely on these histology products for reliability and durability.

VWR® Round Tissue Baths

- Edge serves as drying surface for slides
- Surface is black porcelain enamel coated steel
- Equipped with on/off switch, pilot light, thermostat and non-skid rubber feet
- Rapid heat-up

Supplied With:

- Bath cover
- Thermometer
- Thermometer holder

Round Tissue Bath 80086-982

Specifications

	Cat. No. 80086-982 $554.01	Cat. No. 80086-984 $647.21
Overall Dimensions: (Diameter x Height)	11 in x 3-3/4 in (27.9 cm x 9.2 cm)	
Chamber Dimensions: (Diameter x Height)	8-1/4 in x 2 in (21 cm x 5.1 cm)	
Rim: (Width)	1-1/4 in (3.2 cm)	
Capacity	1L (1 inch from top)	
Temperature Range	35°C to 65°C	
Electrical	115 VAC; 50/60 Hz; 190 W	230 VAC; 50/60 Hz; 190 W
Net Weight	5 lb (2.3 kg)	
Shipping Weight	6 lb (2.7 kg)	

VWR® Round Tissue Bath has a 2 year warranty on parts and workmanship!

VWR® Illuminated Tissue Bath

- Eliminate wrinkles and distortion during preparation of paraffin embedded tissue sections
- Illuminated black background with transparent PYREX® dish allows specimens to be easily seen
- Analog temperature selection with LCD display
- Stainless steel construction with baked gray enamel finish
- Equipped with on/off switch, pilot light and hydraulic thermostat

Illuminated Tissue Flotation Bath 80086-986

VWR® Premium Tissue Bath

- Eliminate wrinkles and distortion during preparation of paraffin embedded tissue sections
- Illuminated black background with transparent PYREX® dish; allows specimens to be easily seen
- Independent analog calibrated safety thermostat
- Microprocessor temperature selection with LCD display
- Stainless steel construction with baked gray enamel finish
- Slide Dryer Block attached to top of unit
- Tissue Orienter Block to smooth wrinkled sections

Premium Illuminated Tissue Bath 80086-990

Both Models Supplied With:

- Removable PYREX® glass dish
- Thermometer

Specifications

	Cat. No. 80086-986 $1,051.91	Cat. No. 80086-990 $1543.06
Overall Dimensions (W x L x H)	15-1/2 in x 13-1/2 in x 4-1/2 in (38.1 cm x 34.3 cm x 11.4 cm)	14-1/2 in x 15-1/2 in x 4-1/2 in (36.8 cm x 39.4 cm x 11.4 cm)
Dryer Block	N/A	2 in x 5 in (5.1 cm x 12.7 cm)
Orienter Block	N/A	2 in x 2 in (5.1 cm x 5.1 cm)
Temperature Range	Ambient +5°C to 60°C	
Uniformity at 55°C	+/- 1°C	
Dryer Block Temperature	N/A	40°C +/- 3°C; preset
Orienter Block Temperature	N/A	55°C +/- 3°C; fixed
Electrical	115 VAC; 50/60 Hz; 600 W; UL	115 VAC; 50/60 Hz; 350 W
Net Weight	13 lb (5.9 kg)	
Shipping Weight	15 lb (6.8 kg)	

VWR® Illuminated Tissue Baths have a 2-year warranty on parts an workmanship!
Pyrex is a registered trademark of Corning, Inc.

VWR® Slide Storage Cabinet

- Six cabinet drawers hold up to 5000 standard 1 inch x 3 inch microscope slides
- Cabinets can be interlocked up to 10 units high
- Plastic drawer dividers can be removed to store objects up to 2 in. (5 cm) wide
- Drawers slide smoothly and easily
- Back of drawer acts as handle for transportation
- Durable cold rolled steel with baked on epoxy finish

Shown with Two Microscope Slide Storage Cabinets 80086-976 and One Cabinet Base 80086-978

Supplied With:

- Sponge block spacers
- Identification labels

Accessories:

	Cat. No.	Price
Cabinet Base with Rubber Feet	80086-978	$92.36
Drawer Only	80086-980	$33.94

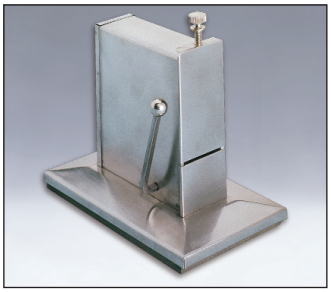
Specifications:

	Slide Storage Cabinet Cat. No. 80086-976 $216.76	Cabinet Base Cat. No. 80086-978 $92.36
Overall Dimensions: (W x D x H)	15-3/4 in x 19 in x 5 in (40 cm x 48.3 cm x 12.7 cm)	15-3/4 in x 18-3/4 in x 2-3/4 in (40 cm x 47.6 cm x 7 cm)
Net Weight	17 lb (7.7 kg)	2-3/4 lb (1.3 kg)
Shipping Weight	20 lb (9.1 kg)	4 lb (1.8 kg)

NOTE: Cabinets are stacked by built-in tabs in the bottom of each unit. Because of this, cabinets will "rock" and be unstable if placed on a bench-top without the use of Cabinet Base 80086-978 underneath the first cabinet. Subsequent cabinets may then be stacked on top of the first cabinet. See photo above.

VWR® Microscope Slide Dispenser

- Stainless steel slide dispenser holds up to 54 - 3 inch x 1 inch slides
- Adjustable to accommodate slides of varying thickness
- Rubber cushion on bottom prevents unit from slipping and scratching the benchtop



Microscope Slide Dispenser 80086-994

Specifications:

	Cat. No. 80086-994 $120.12
Overall Dimensions: (W x L x H)	3 in x 5 in x 4 in (7.6 cm x 12.7 cm x 10.2 cm)
Net Weight	1 lb (0.5 kg)
Shipping Weight	2 lb (0.9 kg)

VWR® Microscope Slide Dispenser has a 2 year warranty on parts and workmanship!

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0207 5M Lit. No. 92383

VWR®

VWR® Benchtop Cooler/Heaters

For All Types Of Sample Cooling, Refrigeration and Heating

Benchtop Refrigerant/Bath 80086-966
Benchtop Heater/Cooler 80086-952
Benchtop Cooler/Freezer 80086-972
Benchtop Cooler 80086-962

VWR offers a complete line of benchtop coolers/heaters for protocols requiring both heating and cooling of samples. They can be used for warming or cooling of cell lines in vials or tubes, or for cooling and heating of blood samples. VWR® Benchtop Coolers/Heaters all feature an LCD temperature display that is easily seen throughout the lab. All coolers/heaters use Peltier thermoelectric cooling.
In addition, all VWR® Coolers/Heaters come with a two-year warranty on parts and labor.

VWR® Benchtop Heater/Cooler

- Maintains 14˚C temperature used in ligation reactions or 17˚C for storing oocytes
- "Press to Set" microprocessor controller
- Excellent alternative to messy ice buckets and water baths, which can be a source of contamination
- Useful for cooling blood samples prior to coagulation
- Suitable for warm incubation of microcentrifuge tubes for hybridization

Benchtop Heater/Cooler 80086-952

Supplied With:

- Two aluminum Block Modules with block extractor; each with a capacity for 14 – 1.5 mL microcentrifuge tubes
- Flat plastic lid

Accessories:

	Cat. No.	Price
Block Module with block extractor: 7 – 0.5 mL and 7 – 1.5 mL microcentrifuge tubes	80086-958	$98.69
Block Module with block extractor: 14 – 0.5 mL microcentrifuge tubes	80086-956	$85.91
Domed plastic lid	80086-960	$44.02

Specifications

	Cat. No. 80086-952 $2112.43	Cat. No. 80086-954 $2352.50
Dimensions (W x L x H)	9.75 in x 11.75 in x 7.25 in (24.8 cm x 28.6 cm x 18.4 cm)	
Well Dimensions – two wells (W x L x H)	2.25 in x 3.5 in x 1.5 in (5.7 cm x 8.7 cm x 3.7 cm)	
Capacity	2 Block Modules	
Temperature Range	-19°C to + 69°C	
Accuracy	+/- 1˚C of set point	
Electrical	115 VAC, 50/60 Hz, 100 W	230 VAC, 50/60 Hz, 100 W (CE)
Net Weight	13 lbs (5.9 kg)	
Shipping Weight	17 lbs (7.7 kg)	

VWR® Benchtop Cooler

- Maintains 14˚C temperature used in ligation reactions or 17˚C for storing oocytes
- Seamless well; functions as a small refrigerated bath
- Accommodates small beakers, flasks or up to 3 standard microplates when stacked
- Excellent alternative to messy ice buckets and water baths, which can be a source of contamination
- Useful for cooling blood samples prior to coagulation

Benchtop Cooler 80086-962

Supplied With:

- Domed plastic lid
- Block extractor

Specifications

	Cat. No. 80086-962 $1421.75	Cat. No. 80086-964 $1595.79
Dimensions (W x L x H)	9.75 in x 11.75 in x 7.25 in (24.8 cm x 28.6 cm x 18.4 cm)	
Well (W x L x H)	6.25 in x 3.75 in x 2.25 in (15.4 cm x 9.7 cm x 5.7 cm)	
Capacity	2 Block Modules	
Temperature Range	+4°C to ambient	
Accuracy	+/- 1°C of set point	
Electrical	115 VAC, 50/60 Hz, 100 W	230 VAC, 50/60 Hz, 100 W (CE)
Net Weight	10 lbs (4.5 kg)	
Shipping Weight	14 lbs (6.7 kg)	

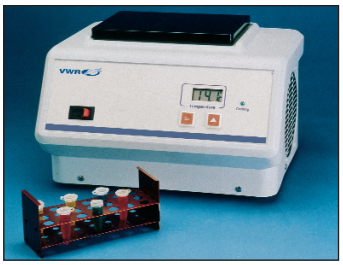
Test Tube Block Modules

Cat. No.	35790-000 $79.65	35790-002 $79.65	35790-004 $79.65	35790-006 $79.65	35790-008 $82.78	35790-010 $82.78	35790-012 $82.78	35790-014 $96.98	35790-016 $96.98	35790-018 $79.50
Dimensions (W x L x H)	3 in x 3.75 in x 2 in (7.6 cm x 9.5 cm x 5.1 cm)									
Capacity	35- 6 mm tubes	20 - 10 mm tubes	20 - 13 mm tubes	12 - 16 mm tubes	6 - 20 mm tubes	6 - 25 mm tubes	3 - 25 mm tubes; 5 - 13 mm tubes; 6 - 6 mm tubes	24 - 1.5 mL tubes	24 - 0.5 mL tubes	48 - 0.2 mL tubes
Net Weight	1 lb (0.45 kg)									
Shipping Weight	2.25 lb (1.0 kg)									

Miscellaneous Block Modules

	Cat. No. 35790-022 $204.32	Cat. No. 48467-112 $222.50	Cat. No. 35790-030 $142.35
Dimensions (W x L x H)	3.75 in x 5.25 in x 1.75 in (9.5 cm x 14.3cm x 4.4 cm)	3.75 in x 6 in x 1 in (9.6 cm x 15.3 cm x 2.5 cm)	3 in x 3.75 in x 2 in (7.6 cm x 9.5 cm x 5.1 cm)
Capacity	1 - 96 well microplate	1 - 96 well 0.2 mL microplate; 0.2 mL strips or 0.2 mL tubes	24 - 1.5 mL "Dolphin" tubes
Net Weight	2.25 lb (1.1 kg)	2.25 lb (1.1 kg)	1.25 lb (0.5 kg)
Shipping Weight	3 lb (1.4 kg)	3 lb (1.4 kg)	2 lb (0.9 kg)

VWR® Benchtop Refrigerant/Bath



Benchtop Refrigerant/Bath 80086-966

- Maintains 14˚C temperature used in ligation reactions or 17˚C for storing oocytes
- Seamless Well; functions as a small refrigerated bath
- Excellent alternative to messy ice buckets
- Useful for cooling blood samples prior to coagulation

Supplied With:

- One Rack: 21 – 1.5 or 2.0 mL microcentrifuge tubes
- Flat plastic lid

Accessories:

	Cat. No.	Price
Domed plastic lid	80086-960	$44.02
Rack	80086-970	$67.28

Specifications:

	Cat. No. 80086-966 $1421.75	Cat. No. 80086-968 $1595.79
Dimensions (W x L x H)		
Overall	9.75 in x 11.75 in x 7.25 in (24.8 cm x 28.6 cm x 18.4 cm)	
Chamber	5.75 in x 2.5 in x 2.25 in (14.3cm x 5.7 cm x 5.7cm)	
Capacity	1 Rack	
Temperature Range	+4°C to Ambient	
Accuracy	+/- 1°C from set point	
Electrical	115 VAC, 50/60 Hz, 100 W	230 VAC, 50/60 Hz, 100 W
Net Weight	10 lb (4.5 kg)	
Shipping Weight	14 lb (6.7 kg)	

VWR® Benchtop Cooler/Freezer

Benchtop Cooler/Freezer 80086-972

- Useful for DNA/RNA ethanol precipitations
- Intermediate term storage of restriction enzymes and other labile reagents
- Active cooling eliminates need to leave samples on the bench too long in ethylene glycol filled freezer blocks

Supplied With:

- Two Block Modules: each holds 7 x 1.5 mL microcentrifuge tubes
- Flat plastic lid

Accessories:

	Cat. No.	Price
Block Module with block extractor: 7 – 0.5 mL and 7 – 1.5 mL microcentrifuge tubes	80086-958	$98.69
Block Module with block extractor: 14 – 0.5 mL microcentrifuge tubes	80086-956	$85.91
Domed plastic lid	80086-960	$44.02

Specifications:

	Cat. No. 80086-972 $1433.16	Cat. No. 80086-974 $1595.79
Dimensions (W x L x H)		
Overall	9.75 in x 11.75 in x 7.25 in (24.8 cm x 28.6 cm x 18.4 cm)	
Chamber	5.75 in x 2.5 in x 2.25 in (14.3 cm x 5.7cm x 5.7 cm)	
Capacity	2 Block Modules	
Temperature Range	-15˚C (typical) 35°C to 39˚C below ambient	
Accuracy	+/- 1°C from set point	
Electrical	115 VAC, 50/60 Hz, 100 W	230 VAC, 50/60 Hz, 100 W
Net Weight	10 lb (4.5 kg)	
Shipping Weight	14 lb (6.7 kg)	

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0207 5M Lit. No. 92382

VWR™ Dry Block Heaters

Quality

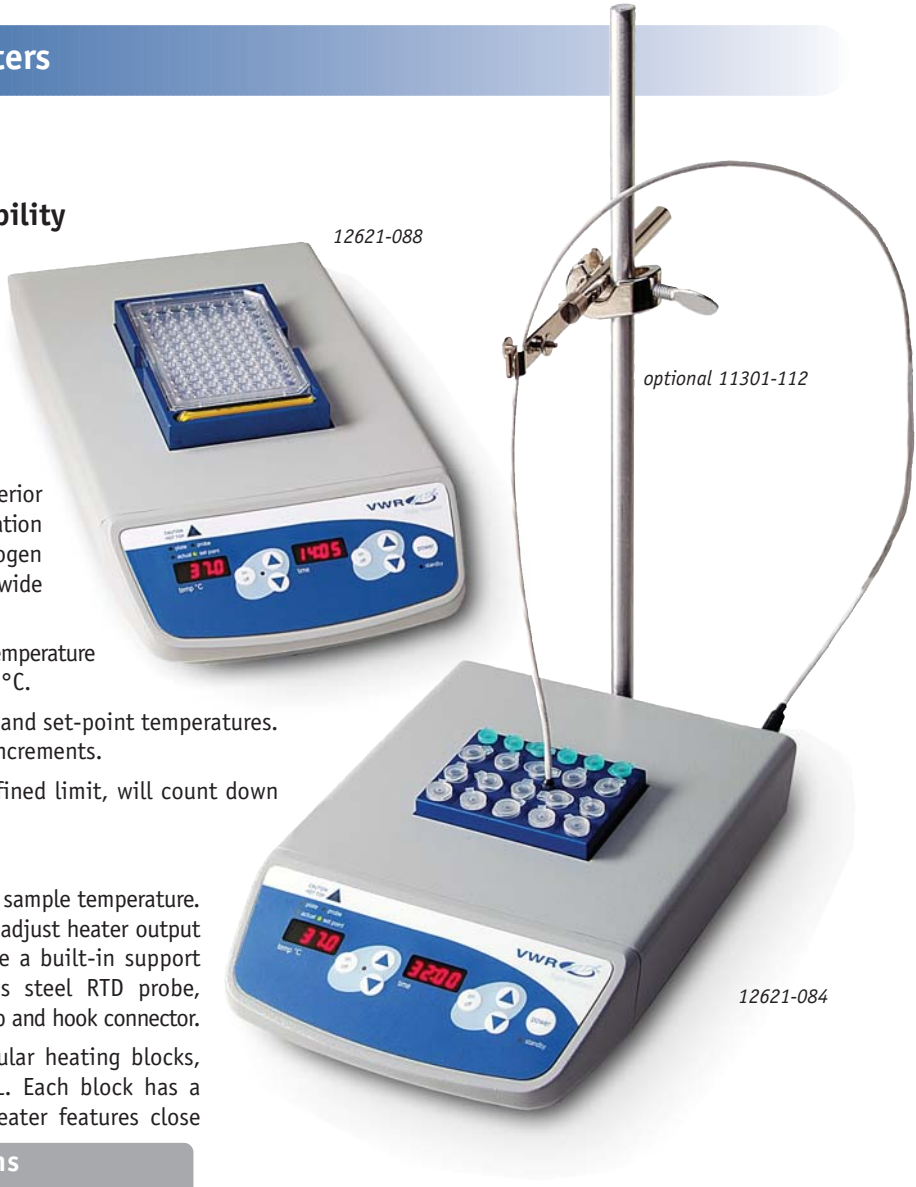
Selection

Value

Two Year Limited Warranty

VWR™ Digital Dry Block Heaters

- **Exceptional temperature uniformity and stability**
- **Optional external temperature probe**
- **Heats from ambient to 120°C**
- **Holds interchangeable VWR modular heating blocks**
- **LED display**



Designed for applications that require repeatable results and superior temperature stability. These multi-purpose units are ideal for incubation and activation of cultures, enzyme reactions, blood urea nitrogen determinations, immunoassays, melting/boiling points, and a wide variety of other laboratory procedures.

Micro-processor PID control, with optional external probe, offers a temperature stability of ±0.1°C with a temperature uniformity as low as ±0.1°C.

Easy-to-use controls with independent LED displays show actual and set-point temperatures. Controls allow users to adjust temperature set-point in ±0.1°C increments.

Timer will display elapsed time or when programmed to user defined limit, will count down to zero and shut off unit.

Audible alarm will sound when time reaches zero.

Optional external temperature probe kit monitors actual block or sample temperature. LED display on front panel will show actual probe temperature and adjust heater output to maintain user defined set-point. All dry block heaters include a built-in support rod holder for mounting the probe kit. Kit includes stainless steel RTD probe, 18" (45.7cm) vertical support rod, thermometer/probe extension clamp and hook connector.

Each of the five models accepts separate interchangeable modular heating blocks, accommodating various tube sizes from 0.25mL micro to 50mL. Each block has a thermometer well for measuring block temperature. Efficient heater features close tube-and-block contact with a low density design for exceptional temperature uniformity. Modular blocks are sold separately.

Caution! To avoid possible electrical hazard, do not fill well or block opening with water or other fluids. Unit is designed as a dry bath/incubator.

Specifications

Block Size	Temperature Range	Stability @ 37°C	Uniformity w/in the Block @ 37°C	Uniformity Across Similar Blocks @ 37°C	Heat-Up Time to 100°C
1 block	ambient +5°C to 120°C	±0.1°C	±0.1°C	N/A	45 min.
2 block				±0.1°C	50 min.
3 block				±0.15°C	55 min.
4 block				±0.2°C	60 min.
6 block				±0.3°C	65 min.

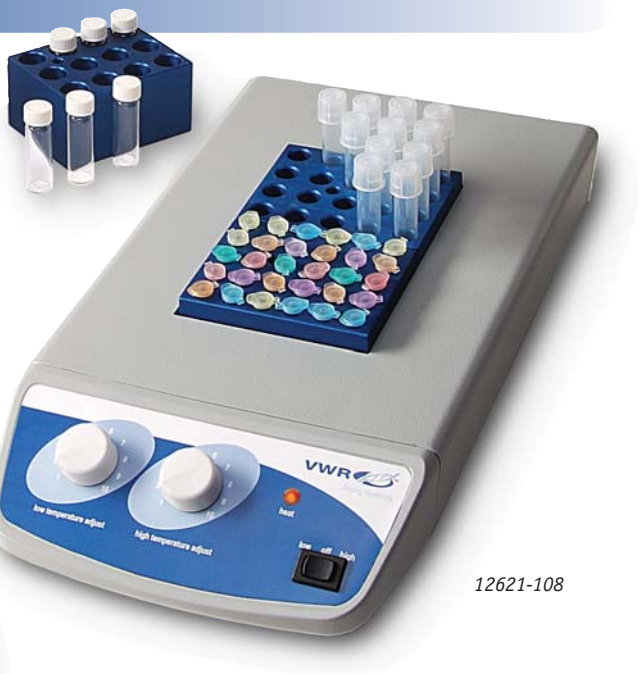
Ordering Information

Units include a 92" (234cm) detachable, 3-wire cord and plug (230 volt units are supplied with Euro type plug).

Digital Dry Block Heaters

Block Capacity	Dimensions (L x W x H)	Electrical (50/60 Hz)	Weight	VWR Cat. No.	List Price
1	12.4 x 8 x 3.5" (31.5 x 20.3 x x8.9cm)	120V / 0.9amps / 110 watts	5.8lb (2.6kg)	12621-084	$529.00
1	12.4 x 8 x 3.5" (31.5 x 20.3 x x8.9cm)	230V / 0.5amps / 110 watts	5.8lb (2.6kg)	12621-086	$582.00
2	15.4 x 8 x 3.5" (39.1 x 20.3 x 8.9cm)	120V / 1.7amps / 210 watts	6.4lb (2.9kg)	12621-088	$649.00
2	15.4 x 8 x 3.5" (39.1 x 20.3 x 8.9cm)	230V / 0.9amps / 210 watts	6.4lb (2.9kg)	12621-090	$715.00
3	18.4 x 8 x 3.5" (46.7 x 20.3 x 8.9cm)	120V / 1.7amps / 210 watts	8lb (3.6kg)	12621-092	$749.00
3	18.4 x 8 x 3.5" (46.7 x 20.3 x 8.9cm)	230V / 0.9amps / 210 watts	8lb (3.6kg)	12621-094	$825.00
4	16.9 x 8 x 3.5" (42.9 x 20.3 x 8.9cm)	120V / 2.6amps / 310 watts	8.5lb (3.9kg)	12621-096	$919.00
4	16.9 x 8 x 3.5" (42.9 x 20.3 x 8.9cm)	230V / 1.3amps / 310 watts	8.5lb (3.9kg)	12621-098	$1012.00
6	20.9 x 8 x 3.5" (53.1 x 20.3 x 8.9cm)	120V / 3.4amps / 410 watts	10lb (4.5kg)	12621-100	$999.00
6	20.9 x 8 x 3.5" (53.1 x 20.3 x 8.9cm)	230V / 1.7amps / 410 watts	10lb (4.5kg)	12621-102	$1099.00
Optional external temperature probe kit				11301-112	$187.06

VWR™ Analog Dry Block Heaters



- **Multi-purpose use**
- **Heats from ambient to 150°C**
- **Holds interchangeable VWR modular heating blocks**
- **Analog controls**

These multi-purpose units are ideal for incubation and activation of cultures, enzyme reactions, blood urea nitrogen determinations, immunoassays, melting/boiling points and a wide variety of other laboratory procedures.

12621-104

12621-108

Two separate temperature adjustment knobs, providing low temperature and high temperature control. Low range knob adjusts from ambient to 100°C and high range knob adjusts from 75°C to 150°C.

High wattage, constant-temperature dry block heaters are economical, versatile and compact. Each of the five models accepts separate interchangeable modular heating blocks, which accommodate various sample enclosures such as micro-tubes, centrifuge tubes, vials, microplates, and PCR strips or tubes. Each block has a thermometer well for measuring block temperature. Anodized aluminum modular heating blocks provide superior temperature stability and heat transfer. Modular blocks are sold separately.

Caution! To avoid possible electrical hazard, do not fill well or block opening with water or other fluids. Unit is designed as a dry bath/incubator.

Specifications

Block Size	Temperature Range	Stability @ 37°C	Uniformity w/in the Block @ 37°C	Uniformity Across Similar Blocks @ 37°C	Heat-Up Time to 100°C
1 block	ambient +5°C to 150°C	±1°C	±0.1°C	N/A	45 min.
2 block		±1.5°C		±0.1°C	50 min.
3 block		±2°C		±0.15°C	60 min.
4 block		±2°C		±0.2°C	70 min.
6 block		±2°C		±0.3°C	75 min.

Ordering Information

Units include a 92" (234cm) detachable, 3-wire cord and plug (230 volt units are supplied with Euro type plug).

Analog Dry Block Heaters

Block Capacity	Dimensions (L x W x H)	Electrical (50/60 Hz)	Weight	VWR Cat. No.	List Price
1	12.4 x 8 x 3.5" (31.5 x 20.3 x x8.9cm)	120V / 0.9amps / 110 watts	5.8lb (2.6kg)	12621-104	$229.00
1	12.4 x 8 x 3.5" (31.5 x 20.3 x x8.9cm)	230V / 0.5amps / 110 watts	5.8lb (2.6kg)	12621-106	$252.00
2	15.4 x 8 x 3.5" (39.1 x 20.3 x 8.9cm)	120V / 1.7amps / 210 watts	6.4lb (2.9kg)	12621-108	$369.00
2	15.4 x 8 x 3.5" (39.1 x 20.3 x 8.9cm)	230V / 0.9amps / 210 watts	6.4lb (2.9kg)	12621-110	$408.00
3	18.4 x 8 x 3.5" (46.7 x 20.3 x 8.9cm)	120V / 1.7amps / 210 watts	8lb (3.6kg)	12621-112	$489.00
3	18.4 x 8 x 3.5" (46.7 x 20.3 x 8.9cm)	230V / 0.9amps / 210 watts	8lb (3.6kg)	12621-114	$539.00
4	16.9 x 8 x 3.5" (42.9 x 20.3 x 8.9cm)	120V / 2.6amps / 310 watts	8.5lb (3.9kg)	12621-116	$619.00
4	16.9 x 8 x 3.5" (42.9 x 20.3 x 8.9cm)	230V / 1.3amps / 310 watts	8.5lb (3.9kg)	12621-118	$680.00
6	20.9 x 8 x 3.5" (53.1 x 20.3 x 8.9cm)	120V / 3.4amps / 410 watts	10lb (4.5kg)	12621-120	$849.00
6	20.9 x 8 x 3.5" (53.1 x 20.3 x 8.9cm)	230V / 1.7amps / 410 watts	10lb (4.5kg)	12621-122	$935.00

VWR™ Modular Heating Blocks and Accessories

Each block has a thermometer well for measuring block temperature (see 'Other Equipment and Accessories').

Single block dimensions: 3.75L x 3W x 2H" (9.5 x 7.6 x 5.1cm), **Double block dimensions:** 6L x 3.75W x 2.25H" (15.2 x 9.5 x 5.7cm)

Caution: To avoid possible electrical hazard, do not fill well or block with water or other liquids. Units are designed as a dry bath/incubator.

Microcentrifuge Tubes

Constructed from a solid anodized aluminum block, the close contact of tubes to block walls allows for maximum heat retention. Single block.

Brand/Sample Type	Well Dia.	No. of Wells	Well Depth	VWR Cat. No.	List Price
VWR .5mL tube	7.9mm	30	27.6mm	13259-000	$83.00
VWR 1.5mL tube	11.1mm	20	39.1mm	13259-286	$85.00
Eppendorf™ 1.5mL tube	11.5mm	20	36.9mm	13259-002	$90.00
VWR/Eppendorf™ 2mL tube	11.5mm	20	38.1mm	12985-048	$87.00
Corning™ 2mL tube	10.9mm	20	38.1mm	12985-050	$87.00

Titer Plate

Constructed from a solid anodized aluminum block. Ideal for 96-well or 384-well titer plates. Recessed well for better stability, flat surface good for flat and round bottom plates. Fits 2/4/6 block heaters. Double block.

Sample Type	Well Depth	VWR Cat. No.	List Price
Titer plate	13.5mm	13259-295	$177.00

Conical-Bottom Centrifuge Tubes

Constructed from a solid anodized aluminum block, the close contact of tubes to block walls allows for maximum heat retention. Single block.

Sample Type	Well Dia.	No. of Wells	Well Depth	VWR Cat. No.	List Price
15mL tube	17.1mm	12	44.5mm	13259-250	$78.00
50mL tube	29.0mm	5	47.6mm	13259-254	$80.00

Standard Test Tubes

These blocks have been designed for standard test tubes. Constructed from a solid anodized aluminum block, the close contact of tubes to block walls allows for maximum heat retention. Single block.

Sample Type	Well Dia.	No. of Wells	Well depth	VWR Cat. No.	List Price
6mm tube	8.3mm	30	48.4mm	13259-105	$90.00
10mm tube	10.7mm	24	48.4mm	13259-107	$82.00
12/13mm tube	13.9mm	20	48.4mm	13259-130	$82.00
12/13mm tube	13.9mm	16	48.4mm	13259-120	$82.00
15/16mm tube	17.5mm	12	48.4mm	13259-162	$82.00
17/18mm tube	19.1mm	12	48.4mm	14216-212	$85.00
20mm tube	21.0mm	8	48.4mm	13259-184	$82.00
25mm tube	26.2mm	6	48.4mm	13259-210	$82.00
35mm tube	35.0mm	4	47.6mm	13259-252	$80.00

These blocks have been designed for variable sized samples. Constructed from a solid anodized aluminum block, the close contact of tubes to block walls allows for maximum heat retention. Single block.

Sample Type	Well Dia.	No. of Wells	Well Depth	VWR Cat. No.	List Price
Test tube combination	8.3mm	6	48.4mm	13259-242	$82.00
6mm, 12/13mm, 25mm	13.9mm	5	48.4mm		
	26.2mm	3	48.4mm		
Centrifuge tube combination	11.1mm	4	39.1mm	12985-040	$87.00
1.5mL, 15mL, 50mL	17.1mm	3	44.5mm		
	29.0mm	2	47.6mm		
Micro-tube combination	7.9mm	6	27.6mm	12985-042	$87.00
.5mL, 1.5mL, 2mL	11.1mm	10	39.1mm		
	11.5mm	5	38.1mm		

Vials

Designed for sample/serum and scintillation vials. Constructed from a solid anodized aluminum block, the close contact of tubes to block walls allows for maximum heat retention. Single block.

Sample Type	Well Dia.	No. of Wells	Well Depth	VWR Cat. No.	List Price
12mm vial	12.7mm	20	30mm	12621-124	$90.00
15mm vial	15.8mm	20	35mm	12621-126	$90.00
17mm vial	17.8mm	12	45mm	12621-128	$90.00
19mm vial	19.7mm	12	45mm	12621-130	$90.00
21mm vial	21.7mm	9	45mm	12621-132	$90.00
23mm vial	23.8mm	8	45mm	12621-134	$90.00
25mm vial	25.8mm	8	45mm	12621-136	$90.00
28mm vial	28.8mm	6	45mm	12621-138	$90.00

PCR - Plates, Tubes, Strips

Constructed from a solid anodized aluminum block, the close contact of tubes to block walls allows for maximum heat retention. Tapered tube wells for 0.2mL tubes. Spaced for easy access and removal. Single and double block.

Sample Type	Block Size	Well Dia.	No. of Wells	Well Depth	VWR Cat. No.	List Price
96-well PCR plate	Double	6.4mm	96	15.5mm	13259-260	$214.00
10 x 8 tube strips	Single	6.4mm	80	15.5mm	13259-256	$102.00
Individual tubes	Single	6.4mm	64	20.2mm	13259-258	$102.00

Cuvette

Constructed from a solid anodized aluminum block. Two parallel slots fit 6 cuvettes in each slot, side-by-side for excellent stability and heat transfer. Single block.

Sample Type	No. of Wells	Well Depth	VWR Cat. No.	List Price
(12) 12.5mm cuvettes	2	25.4mm	13259-290	$104.00

Solid Blocks

Constructed of a solid anodized aluminum block. For use as a low-temperature hotplate or for custom drilling to make your own custom block. Single or double block.

Block Size	Dimension (L x W x H)	VWR Cat. No.	List Price
Single	3.75 x 3 x 2" (9.5 x 7.6 x 5.1cm)	13259-288	$88.00
Double	6 x 3.75 x 2.25" (15.2 x 9.5 x 5.7cm)	13259-297	$127.00

Ideal for irregular vessels. Stainless steel construction for superior corrosion resistance. Designed to hold sand, stainless steel shot or non-volatile liquids.

For Unit	Dimensions (L x W x H)	VWR Cat. No.	List Price
1 block heater	3.75 x 3 x 2.5" (9.5 x 7.6 x 6.4cm)	13259-262	$194.00
2 block heater	3.75 x 5.875 x 2.5" (9.5 x 14.9 x 6.4cm)	13259-264	$214.00
3 block heater	3.75 x 8.8 x 2.5" (9.5 x 22.4 x 6.4cm)	13259-266	$194.00
4 block heater	5.8 x 7.5 x 2.5" (14.7 x 19.1 x 6.4cm)	13259-268	$208.00
6 block heater	5.8 x 11.3 x 2.5" (14.7 x 28.7 x 6.4cm)	13259-270	$223.00

Accessory	VWR Cat. No.	List Price
Sand, 1lb (.454kg)	13259-272	$57.00
Stainless steel shot, 1lb (.454kg)	13259-274	$70.00

Plexiglass cover reduces air flow for additional temperature stability in low-temperature applications. Two sides are open .25" (6.4mm).

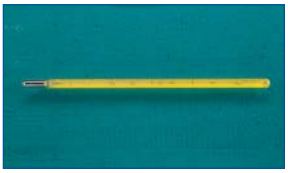
Block Size	Dimensions (L x W x H)	VWR Cat. No.	List Price
2 block cover	6.5 x 6.5 x 1.625" (16.5 x 16.5 x 4.1cm)	13259-301	$71.00
4 block cover	8.5 x 8.5 x 1.625" (21.6 x 21.6 x 4.1cm)	13259-303	$76.00
6 block cover	12.5 x 8.5 x 1.625" (31.8 x 21.6 x 4.1cm)	13259-304	$73.72

Other Equipment and Accessories

VWR™ Dry Bath/Block Heater Thermometers

Thermometers are housed in 2.0mL micro-tubes for direct insertion into dry baths or block heaters. For 1.375" (3.5cm) immersion. Spirit-filled. Flouropolymer resin coated. Individually serialized.

Range	Division	Accuracy	Length	VWR Cat. No.	List Price
18 to 60°C	0.5°C	+/-1°	5" (12.7cm)	61018-120	$47.61
50 to 110°C	0.5°C	+/-1°	6" (15.2cm)	61018-122	$47.61



VWR Enviro-Safe™ Thermometers

Thermometers are filled with non-toxic, non-hazardous biodegradable Enviro-Safe™ liquid against white back glass. For 1.375" (3.5cm) immersion. Individually serialized. Arrows at 25, 30, 37 and 56°C.

Range	Division	Accuracy	Length	VWR Cat. No.	List Price
24 to 57°C	0.5°C	+/-1°	6.9" (17.5cm)	33600-044	$28.55
24 to 57°C	0.5°C	+/-1°	6.9" (17.5cm)	33600-046*	$31.19

* Flouropolymer resin-coated.

VWR™ Hotplates and Hotplate/Stirrers
700 Series Advanced

- Accurate and repeatable results
- Electronic stir brake
- LED display
- On-board memory recalls last set temperature
- Overshoot protection
- Space saving design
- Hot top indicator

Description	Top Plate Size	Top Plate Material	VWR Cat. No.	List Price
Hotplate	7 x 7" (17.8 x 17.8cm)	ceramic	12365-474	$227.13
Hotplate	7 x 7" (17.8 x 17.8cm)	aluminum	12365-478	$268.83
Stirrer	7 x 7" (17.8 x 17.8cm)	ceramic	12365-380	$262.30
Stirrer	7 x 7" (17.8 x 17.8cm)	aluminum	12365-386	$289.67
Hotplate/Stirrer	7 x 7" (17.8 x 17.8cm)	ceramic	12365-476	$393.97
Hotplate/Stirrer	7 x 7" (17.8 x 17.8cm)	aluminum	12365-480	$468.53

VWR Talon™ Ultra Flex Support System
Base Plate

Designed with a stable base plate that fits easily on bench tops or in fume hoods. The unique flexible arm is extremely versatile and can be placed in virtually every position or angle. Flexible arm comes in 12" (30.5cm) or 18" (45.7cm) lengths. All systems include 2-prong, 3-prong and spring clamp head.

Also available with lab-frame connector or bench clamp.

Description	VWR Cat. No.	List Price
Ultra Flex 12 with Base Plate	12621-208	$185.00
Ultra Flex 18 With Base Plate	12621-210	$222.00

VWR SuperSpin™ Microcentrifuge Tubes
Polypropylene

- Volume of 1.5mL
- Withstand spins up to 35,000 *g*
- RNase-, DNase-, and Endotoxin-free

These tubes incorporate a high-strength wall and can be centrifuged to twice the g-force that most other microcentrifuge tubes can withstand. Tubes also feature flat, pierceable, frosted caps and a side labeling surface. The ergonomically designed caps with smooth surfaces help reduce the potential for repetitive strain injuries. Ideal for phenol/chloroform extractions. Tubes fit all common rotors. Steam autoclavable to 122°C and freezable to -90°C.

Tube Color	VWR Cat. No.	List Price (Case of 10)
Natural	20170-038	$271.65
Green	20170-024	$314.42
Blue	20170-026	$314.42
Purple	20170-028	$314.42
Red	20170-030	$314.42
Orange	20170-032	$314.42
Yellow	20170-034	$314.42
Amber	20170-036	$314.42
Rainbow	20170-022	$314.59

VWR™ Vortex Mixers
Analog Vortex Mixer

- Continuous or touch modes
- Variable speed control

Variable speed with an analog control that allows for gentle shaking or high speed mixing for vigorous vortexing of samples.

Also available; Fixed Speed, Digital and Pulsing Vortex Mixers.

Description	Speed Range	VWR Cat. No.	List Price
Fixed Speed Vortex Mixer	3200rpm	12620-838	$248.00
Analog Vortex Mixer	100 to 3200rpm	58816-121	$305.00
Digital Vortex Mixer	500 to 3000rpm	14005-824	$405.00
Pulsing Vortex Mixer	500 to 3000rpm	12620-862	$497.00

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VWR™ Undercounter and Freestanding/Mobile Glassware Washers

Automatic

Space Saving

Easy-to-Use

#82020-924

VWR Furniture | designed . delivered . installed

VWR™ Undercounter and Freestanding/Mobile Glassware Washers

- Stainless steel construction provides long life, corrosion protection, and superior cosmetic appearance
- High efficiency operation with low water usage reduces energy and chemical costs
- Wide variety of specialty baskets and accessories available
- Optional auxiliary drying system for extra drying time
- Optional accessory can provide automatic detergent and neutralizer dosing from large capacity containers

VWR Undercounter Washers fit in a standard cabinet opening and feature adjustable legs that can be set to a convenient height. The interface is simple to understand, allowing casual users to operate the equipment. Loading is easy and flexible. Temperature selections from 29°C (85°F) to 77°C (170°F) allow the washer to be used for a wide variety of loads. Most baskets will fit in the upper 10.25˝ (26 cm) clearance or lower rack 12.75˝ (32 cm) clearance in any combination.

Optional spindle-ready models can accommodate either 1 or 2 direct injection spindle racks to clean as many as 22 flasks up to 20.75˝ (53 cm) tall, or for maximum loading, 44 shorter flasks–22 up to 9.75˝ (25 cm) tall and 22 up to 7.75˝ (20 cm) tall.

VWR Freestanding/Mobile Glassware Washers offer all of the features of undercounter washers. These units are shipped with both casters (installed when shipped) and adjustable leveling feet.

There is a warranty on all units, parts, and labor for one year.

Ordering Information

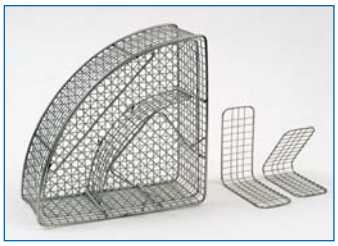
Description	VWR Cat. No.	List Price
Undercounter Washer	82020-922	3089.00
Freestanding Washer	82020-924	3913.00
Undercounter Washer with DI rinse	82030-586	4999.00
Freestanding Washer with DI rinse	82030-588	5599.00
Undercounter Washer, spindle capable*	82100-002	5158.00
Freestanding Washer, spindle capable*	82100-004	5758.00

*Units supplied with standard VWR racks, spindle racks extra

Accessories

Spindle Racks

VWR Cat. No.	List Price	Description
82020-950	1731.00	Lower spindle rack, 22 spindles, 10.5″ clearance, must be used with 82020-954
82020-954	1731.00	Upper spindle rack, 22 spindles, 6″ clearance, must be used with 82020-950
82020-956	1877.00	Lower spindle rack, 22 spindles, 19.5″ clearance, must be used without an upper rack
82021-090	1731.00	Half depth upper spindle rack, 12 spindles, 6″ clearance, must be used with 82020-950. Allows washing of short and tall items in the same load
82020-958	2695.00	Spindle rack set, includes 82020-950, 82020-954, and parts to convert 82020-954 into 82020-956



Test Tube Baskets and Lids

VWR Cat. No.	List Price	Description
82020-972	328.00	Test Tube Basket & lid, for up to 150 tubes, 75 mm long, stainless steel, fits 1/4 of top or bottom rack
82020-974	328.00	Test Tube Basket & lid, for up to 150 tubes, 105 mm long, stainless steel, fits 1/4 of top or bottom rack
82020-976	328.00	Test Tube Basket & lid, for up to 150 tubes, 165 mm long, stainless steel, fits 1/4 of bottom rack only
82020-978	328.00	Test Tube Basket & lid, for up to 150 tubes, 200 mm long, stainless steel, fits 1/4 of bottom rack only

Bottle Insert

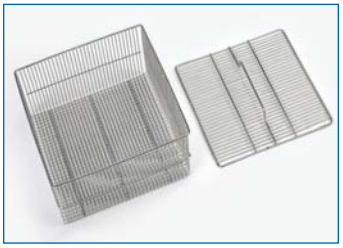
VWR Cat. No.	List Price	Description
82020-984	191.00	Bottle Insert, full rack, holds 16 1-liter bottles, stainless steel, for use in bottom rack only
82020-986	191.00	Bottle Insert, full rack, holds 9 2-liter bottles, stainless steel, for use in bottom rack only
82020-988	191.00	Bottle Insert, full rack, holds 48 50 mL bottles, stainless steel, for use in bottom rack only
82020-990	284.00	Bottle Insert, full rack, holds 44 100 mL bottles, stainless steel, for use in top or bottom rack
82020-992	284.00	Bottle Insert, full rack, holds 24 250 mL bottles, stainless steel, for use in top or bottom rack
82020-994	234.00	Bottle Insert, full rack, holds 20 500 mL bottles, stainless steel, for use in top or bottom rack

Open Basket with Handles and Retainer Top

VWR Cat. No.	List Price	Description
82020-980	203.00	Open Basket with handles, stainless steel, fits 1/2 of top or bottom rack

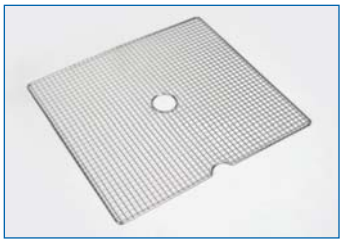
Petri Dish Insert

VWR Cat. No.	List Price	Description
82020-966	185.00	Petri Dish Insert, stainless steel, fits 1/2 of top or bottom rack



Small Basket and Cover

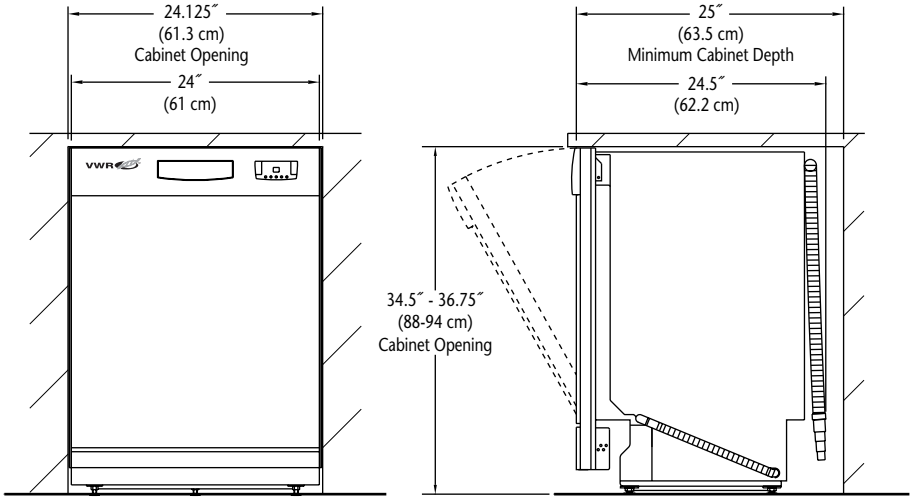
VWR Cat. No.	List Price	Description
82020-960	83.00	Small Basket & Cover, 7.5″ (19 cm) L x 7.5″ (19 cm) W x 4″ (10 cm) D, stainless steel, fits 1/4 of top or bottom rack



Other Available Items

VWR Cat. No.	List Price	Description
82020-962	139.00	Erlenmeyer Flask Insert, holds 5 flasks up to 1500 mL, use on top or bottom
82020-982	139.00	Watch glass Insert, up to 40 pieces, up to 125 mm dia., fits 1/2 of top or bottom rack
82020-964	185.00	BOD Bottle Insert, holds 18 bottles, fits 1/2 of top or bottom rack
82020-996	85.00	Cover/mesh bottom for full size inserts, stainless steel, for use in top or bottom rack
82020-998	85.00	Bottom mesh for 1/2 size inserts, stainless steel, for use in top or bottom rack

VWR™ Undercounter and Freestanding/Mobile Glassware Washers Specifications



Front View Side View

VWR Cat. No.		82020-922 82020-924*	82030-586 82030-588*	82100-002[1] 82100-004*[1]
Volume		6.0 ft³		
		170 L		
Chamber Material		304 Stainless		
Exterior Material		304 Stainless		
Exterior Dimensions (W x D x H)		24″ x 24.5″ x 34.25-36.5″ Adjustable		
(Undercounter)		61 x 62 x 87-93 cm Adjustable		
Exterior Dimensions (W x D x H)		24″ x 24.5″ x 38.375″ Min Adjustment		
(Freestanding/Mobile)		61 x 62 x 97.5 cm Min Adjustment		
Interior Dimensions		21.5″ x 19″ x 25.25″		
(W x D x H)		55 x 48 x 64 cm		
Loading levels		2		
Wash Cycles		6		
Temperature Range		29-77°C		
Ship Weight	Undercounter	120 lbs (54 kg)		
	Freestanding	175 lbs (80 kg)		
Tap Water		2 gpm (8 L/min) @ 18-60 psig (1.3-4.1 bar)		
DI Water		N/A	2 gpm (8 L/min) @ 18-60 psig (1.3-4.1 bar) less than 1 Megohm/cm resistivity	
Max Water Consumption		5.4 Gallons (20 L)	4.3 Gallons (15 L) Tap Water	
		N/A	1.3 Gallons (5 L) DI Water	
Min Water Consumption (Excludes Rinse Only)		2.0 Gallons (7.5 L)	1.3 Gallons (5 L) Tap Water	
		N/A	0.7 Gallons (2.5 L) DI Water	
Electrical		115V, 60Hz, 15A 1 Phase		
		220V, 50Hz, 10A 1 Phase		
Clearance	upper open rack	10.25″ (26 cm)		
	lower open rack	12.75″ (32 cm)		
Spindle Racks		No		Yes
Clearance	single rack	N/A		20.75″ (53 cm)
	upper rack	N/A		7.75″ (20 cm)
	lower rack	N/A		9.75″ (25 cm)

*Freestanding Models [1]Units supplied with standard VWR racks, spindle racks extra

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